

# FILE NOTATIONS

Entered in NID File ✓..... Checked by Chief .....

Location Map Pinned ..... Approval Letter .....

Card Indexed ✓..... Disapproval Letter .....

## COMPLETION DATA:

Date Well Completed .....

WW..... TA..... Location Inspected .....

..... OS..... PA..... Bond released

State or Fee Land .....

## LOGS FILED

Driller's Log.....

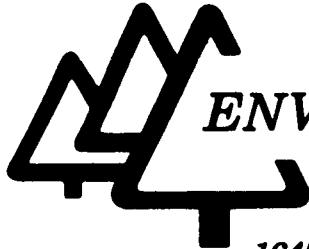
Electric Logs (No.) .....

E..... I..... Dual I Lat..... GR-N..... Micro.....

BHC Sonic GR..... Lat..... Mi-L..... Sonic.....

CBLog..... CCLog..... Others.....

210-93 Jef



**ENVIROTEK**

**1645 Court Place  
Denver, Co. 80202**

**Suite 235**

**(303) 573-9593**

**January 3, 1979**

**Mr. Ed Guynn  
District Engineer  
U.S.G.S.  
8440 Federal Bldg.  
Salt Lake City, Utah 84138**

**Re: Forest Oil Corporation  
Sigurd Unit # 1  
Sevier County, Utah**

**Dear Mr. Guynn:**

**Enclosed please find the Application for Permit to Drill the above referenced well. When we requested permission to stake this well, Natural Resources Corporation was going to operate. Since that time, Forest Oil Corporation has been designated as operator.**

**The lease has an expiration date of February 1, 1979. We are therefore requesting that an onsite inspection be set up for the week of January 8, 1979, if at all possible. This will allow for approval of the location, as well as the building of the location.**

**The Designation of Operator from Chevron (they own the lease in question) is included. If any additional information is needed, please advise.**

**Very truly yours,**

  
**Kathy Patterson**

**UNITED STATES**  
**DEPARTMENT OF THE INTERIOR**  
**GEOLOGICAL SURVEY**

**APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK**

**1. TYPE OF WORK**DRILL DEEPEN PLUG BACK **b. TYPE OF WELL**OIL WELL GAS WELL 

OTHER W/C

SINGLE ZONE MULTIPLE ZONE **2. NAME OF OPERATOR**

Forest Oil Corporation

**3. ADDRESS OF OPERATOR**821 17th Street  
700 Colorado Federal Bldg.- Denver, CO 80202**4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*)**

At surface

392' FWL

264' FNL Sec. 14 T22S, R1W

At proposed prod. zone

same

2862'

NW SW

**14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\***

4.5 miles Southeast of Aurora, Utah

**15. DISTANCE FROM PROPOSED\***

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drilg. unit line, if any)

397'

**16. NO. OF ACRES IN LEASE**1267 17. NO. OF ACRES ASSIGNED  
TO THIS WELL

160

**18. DISTANCE FROM PROPOSED LOCATION\***

TO NEAREST WELL, DRILLING, COMPLETED,

OR APPLIED FOR, ON THIS LEASE, FT.

**19. PROPOSED DEPTH**

8900'

**20. ROTARY OR CABLE TOOLS**

Rotary

**21. ELEVATIONS (Show whether DF, RT, GR, etc.)**

5408 GR.

**22. APPROX. DATE WORK WILL START\***

February 1, 1979

**23.****PROPOSED CASING AND CEMENTING PROGRAM**

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|--------------|----------------|-----------------|---------------|--------------------|
| 17-1/2"      | 13-3/8"        | 48#             | 500'          | To surface         |
| 8 3/4"       | 5-1/2"         | 15.5 & 17#      | 8900'         | 350 sacks          |

OK  
WTM

**IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM:** If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

**24.**

SIGNED

Jeff Spader

TITLE

Div. Drilling &amp; Prod. Mgr.

DATE January 2, 1979

(This space for Federal or State office use)

PERMIT NO.

43-04-30018

APPROVAL DATE

APPROVED BY

W.P. Martin

TITLE

ACTING DISTRICT ENGINEER

DATE

JAN 16 1979

CONDITIONS OF APPROVAL, IF ANY:

United States Department of the Interior  
Geological Survey  
8440 Federal Building  
Salt Lake City, Utah 84138

## Usual Environmental Analysis

Lease No. 11-30650Operator Forest Oil CorporationWell No. 1Location 392' FWL & 2862' FNL Sec. 14 T. 22S R. 1WCounty Sevier NW $\frac{1}{4}$  SW $\frac{1}{4}$  State Utah Field WildcatStatus: Surface Ownership Private Minerals FederalJoint Field Inspection Date January 15, 1979

## Participants and Organizations:

Chuck Horsburgh Bureau of Land Management-RichfieldRod Lee Bureau of Land Management-RichfieldKathy Patterson EnvirotekJim Jackson Forest Oil CorporationGeorge Diwachak U.S. Geological Survey

## Related Environmental Analyses and References:

- (1) Unit Resource Analysis - North Sevier Planning Unit (05-02) BLM, Richfield
- (2)

Analysis Prepared by:

George Diwachak  
Environmental Scientist  
Salt Lake City, Utah

Date: January 16, 1979

JAN 16 1979

Pvt Sur  
Pcd 300x300  
Pit 100x150  
100' new access  
up grade 4/5 mi exist rd  
flowline not incl  
stockpile topside  
2.2 ac

Proposed Action:

On January 3, 1979, Forest Oil Corporation filed an Application for Permit to Drill the No. 1 exploratory well a 8500-ft. oil and gas test of the Twin Creek and Navajo-Nugget Formations; located at an elevation of 5408 GR ft. in the NW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 14, T. 22 S., R. 1W. on Federal mineral lands and Private surface; Lease No. U-30650. There was no objection raised to the wellsite nor to the access road. Access may follow an alternate route following upgraded haul roads maintained and utilized by the surface owner, U.S. Gypsum Company. See attached map for the alternate route.

A rotary rig would be used for the drilling. An adequate casing and cementing program is proposed. Fresh-water sands and other mineral-bearing formations would be protected. A Blowout Preventor would be used during the drilling of the well. The proposed pressure rating should be adequate. Details of the operator's NTL-6 10-Point Subsurface and 13-Point Surface Protection Plans are on file in the USGS District Office in Salt Lake City, Utah and the USGS Northern Rocky Mountain Area Office in Casper, Wyoming.

A working agreement has been reached with U.S. Gypsum Company, the controlling surface owner. Rehabilitation plans would be decided upon as the well neared completion; the Surface Management Agency, BLM, Richfield District, would be consulted for technical expertise on those arrangements.

*Put Sur*

The operator proposes to construct a drill pad 300 ft. wide x 300 ft. long and a reserve pit 100 ft. x 150 ft. A new access road would be constructed 18 ft. wide x 100 ft. long. Approximately 0.4 miles of existing road would require upgrading to an 18 ft. width from a maintained U.S. Gypsum haul road

The operator proposes to construct production facilities on the disturbed area of the proposed drill pad.

If production is established, plans for a gas flowline would be submitted to the appropriate agencies for approval. The anticipated starting date is January 19, 1979 and duration of drilling activities would be about 98 days.

Location and Natural Setting:

The proposed drillsite is approximately 4.5 miles SE of Aurora, Utah, the nearest town. A fair road runs to within 0.4 miles of the location. This well is a wildcat.

Topography:

The topography of the general area consists of rugged low hills characteristic of the eastern front of the Wasatch Plateau. Location topography is relative-

flat to gently sloping surrounded by resistant knolls, characteristic formation of the Arapien shale.

Geology:

The surface geology is Arapien shale. The soil is arid clays. No geologic hazards are known near the drillsite. Seismic risk for the area is minor based on historic evidence. Anticipated geologic tops are filed with the 10-Point Subsurface Protection Plan.

Approval of the proposed action would be conditioned that adequate and sufficient electric/radioactive/density logging surveys would be made to locate and identify any potential mineral resources. Production casing and cementing would be adjusted to assure no influence of the hydro-carbon zones through the well bore on these minerals. In the event the well is abandoned, cement plugs would be placed with drilling fluid in the hole to assure protection of any mineral resources.

The potential for loss of circulation would exist. Loss of circulation may result in the lowering of the mud levels, which might permit exposed upper formations to blow out or to cause formation to slough and stick to drill pipe. A loss of circulation would result in contamination due to the introduction of drilling muds, mud chemicals, filler materials, and water deep in to the permeable zone, fissures, fractures, and caverns within the formation in which fluid loss is occurring. The use of special drilling techniques, drilling muds, and lost circulation materials may be effective in controlling lost circulation.

A geologic review of the proposed action has been furnished by the Area Geologist, U.S. Geological Survey, Salt Lake City, Utah.

The operator's drilling, cementing, casing and blowout prevention programs have been reviewed by the Geological Survey engineers and determined to be adequate.

Soils:

No detailed soil survey has been made of the project area. The top soils in the area are a clay type soil. The soil is subject to runoff from rainfall and has a moderate runoff potential and sediment production would be high. The soils are mildly to moderately alkaline and support the salt-desert shrub community. The pinon, juniper association is also present.

Top soil would be removed from the surface and stockpiled. The soil would be spread over the surface of disturbed areas when abandoned to aid in rehabilitation of the surface. Rehabilitation is necessary to prevent erosion and encroachment of undesired species on the disturbed areas. The operator proposes to rehabilitate the location and access roads per the recommendations of the Bureau of Land Management.

Approximately 2.2 acres of land would be stripped of vegetation. This would increase the erosional potential. Proper construction practice, construction of water bars, reseeding of slope-cut area would minimize this impact.

Air:

No specific data on air quality is available at the proposed location. There would be a minor increase in air pollution due to emissions from rig and support traffic engines. Particulate matter would increase due to dust from travel over unpaved dirt roads. The potential for increased air pollution due to leaks, spills, and fire would be possible.

Relatively heavy traffic would be anticipated during the drilling-operations phase, increasing dust levels and exhaust pollutants in the area. If the well was to be completed for production, traffic would be reduced substantially to a maintenance schedule with a corresponding decrease of dust levels and exhaust pollutants to minor levels. If the project results in a dry hole, all operations and impact from vehicular traffic would cease after abandonment. Due to the limited number of service vehicles and limited time span of their operation, the air quality would not be substantially reduced.

Toxic or noxious gases would not be anticipated.

Precipitation:

Annual rainfall should range from about 8 to 11" at the proposed location. The majority of the numerous drainages in the surrounding area are of a non-perennial nature flowing only during early spring runoff and during extremely heavy storms. This type of storm is rather uncommon as the normal annual precipitation is around 8".

Winds are medium and gusty, occurring predominately from southwest to northeast. Air mass inversions are seasonal occurring frequently in winter. The climate is semi-arid with abundant sunshine, hot summers and cold winters with temperature variations on a daily and seasonal basis.

Surface Water Hydrology:

Drainage from the location is through intermittent washes to the Sevier River.

A culvert, with size determined by the BLM would be required on the drainage located immediately west of the proposed drill pad.

Some additional erosion would be expected in the area since surface vegetation would be removed. If erosion became serious, drainage systems such as water bars and dikes would be installed to minimize the problem. The proposed project should have minor impact on the surface water systems. The potentials for pollution would be present from leaks or spills. The operator is required to report and clean-up all spills or leaks.

Ground Water Hydrology:

Some minor pollution of ground water systems would occur with the introduction of drilling fluids (filtrate) into the aquifer. This is

normal and unavoidable during rotary drilling operations. The potential for communication, contamination and comingling of formations via the well bore would be possible. The drilling program is designed to prevent this. There is need for more data on hydrologic systems in the area and the drilling of this well may provide some basic information as all shows of fresh water would be reported. Water production with the gas would require disposal of produced water per the requirements of NTL-2B. The depths of fresh water formations are listed in the 10-Point Subsurface Protection Plan. There would be no tangible effect on water migration in fresh water aquifers. The pits would be unlined. If fresh water should be available from the well, the owner or surface agency may request completion as a water well if given approval.

Vegetation:

Location vegetation consists of a sparse covering of juniper, sagebrush, rabbitbrush, saltbrush and native grasses.

Plants in the area are of the salt-desert-shrub types grading to the pinon-juniper association.

Proposed action would remove about 2.2 acres of vegetation. Removal of vegetation would increase the erosional potential and there would be a minor decrease in the amount of vegetation available for grazing.

The operator proposes to rehabilitate the surface upon completion of operations.

Wildlife:

The fauna of the area consists predominantly of mule deer, coyotes, rabbits, foxes, and varieties of small ground squirrels and other types of rodents and various types of reptiles. The area is used by man for the primary purpose of grazing domestic livestock and sheep. The birds of the area are raptors, finches, ground sparrow, magpies, crows, and jays.

A regional animal and plant inventory has been made by the BLM. Soils derived from the Arapien shale provide favorable conditions for Townsendia Aprica an endangered forb, however, there are no reported occurrences at the proposed site. No endangered animal species are known to habitat at the project area.

Social-Economic Effect:

An on the ground surface archaeological reconnaissance has been completed. Appropriate clearances have been obtained from the surface managing agency. If a historic artifact, an archaeological feature or site is discovered during construction operations; activity would cease until the extent, the scientific importance, and the method of mitigating the adverse effects could be determined by a qualified cultural resource specialist.

There are a few occupied dwellings in the Lost Creek area, approximately 2 miles north of the proposed location. Minor distractions from aesthetics would occur over the lifetime of the project and is judged to be minor. All permanent facilities placed on the location would be painted a color to blend in with the natural environment. Present use of the area is grazing, recreation, and oil and gas activities.

Noise from the drilling operation may temporarily disturb wildlife and people in the area. Noise levels would be moderately high during drilling and completion operations. Upon completion, noise levels would be infrequent and significantly less. If the area is abandoned, noise levels should return to pre-drilling levels.

The site is not visible from any major roads. After drilling operations, completion equipment would be visible to passersby of the area but would not present a major intrusion.

The economic effect on one well would be difficult to determine. The overall effect of oil and gas drilling and production activity are significant in Sevier County.

But should this well discover a significant new hydrocarbon source, local, state, and possible national economics might be improved. In this instance, other development wells would be anticipated, with substantially greater environmental and economic impacts.

Should the wellsite be abandoned, surface rehabilitation would be done according to the surface owner's requirements and to USGS's satisfaction. This would involve leveling, contouring, reseeding, etc., of the location and possibly the access road. If the well should produce hydrocarbons, measures would be undertaken to protect wildlife and domestic stock from the production equipment.

There are no national, state, or local parks, forests, wildlife refuges or ranges, grasslands, monuments, trails or other formally designated recreational facilities near the proposed location.

The proposed location is on private surface within the North Sevier Planning Unit(05-02). This Environmental Assessment Record was compiled by the Bureau of Land Management, the surface managing agency of the Federal surface in the area. The study includes additional information on the environmental impact of oil and gas operations in this area and gives land use recommendations. The E.A.R. is on file in the agency's State offices and incorporated herein by reference.

#### Waste Disposal:

The mud and reserves pits would contain all fluids used during the drilling operations. A trash pit would be utilized for any solid wastes

generated at the site and would be buried at the completion of the operations. Sewage would be handled according to State sanitary codes. For further information, see the 13-Point Surface Plan.

Alternative to the Proposed Action:

(1) Not approving the proposed permit--the oil and gas lease grants the lessee the exclusive right to drill for, mine, extract, remove and dispose of all oil and gas deposits. Under leasing provisions, the Geological Survey has an obligation to allow mineral development if the environmental consequences are not too severe or irreversible. Upon rehabilitation of the site, the environmental effects of this action would be substantially mitigated, if not totally annulled. Permanent damage to the surface and sub-surface would be prevented as much as possible under USGS and other controlling agencies supervision with rehabilitation planning reversing almost all effects. Additionally, the growing scarcity of (oil and gas) should be taken into consideration. Therefore, the alternative of not proceeding with the proposed action at this time is rejected.

(2) Minor relocation of the wellsite and access road or any special, restrictive stipulations or modifications to the proposed program would not significantly reduce the environmental impact. There are no severe vegetative, animal or archaeological-historical-cultural conflicts at the site. Since only a minor impact on the environment would be expected, the alternative of moving the location is rejected. At abandonment, normal rehabilitation of the area such as contouring, reseeding, etc., would be undertaken with an eventual return to the present status as outlined in the 13-Point Surface Plan.

Adverse Environmental Effects Which Cannot Be Avoided:

Surface disturbance and removal of vegetation from approximately 2.2 acres of land surface for the lifetime of the project which would result in increased and accelerated erosional potential. Grazing would be eliminated in the disturbed areas and there would be a minor and temporary disturbance of wildlife and livestock. Minor air pollution due to exhaust emissions from rig engines of support traffic engines would occur. Minor increase in dust pollution would occur due to vehicular traffic associated with the operation. If the well is a gas producer, additional surface disturbance would be required to install production pipelines. The potential for fires, leaks, spills of gas, oil or water would exist. During the construction and drilling phases of the project, noise levels would increase. Potential for sub-surface damage to fresh water aquifers and other geologic formations exists. Minor distractions from aesthetics during the lifetime of the project would exist. If the well is a producer, an irreplaceable and irretrievable commitment of resources would be made. Erosion from the site would eventually be carried as sediment in the Sevier River. The potential for pollution to the river would exist through leaks and spills.

Determination:

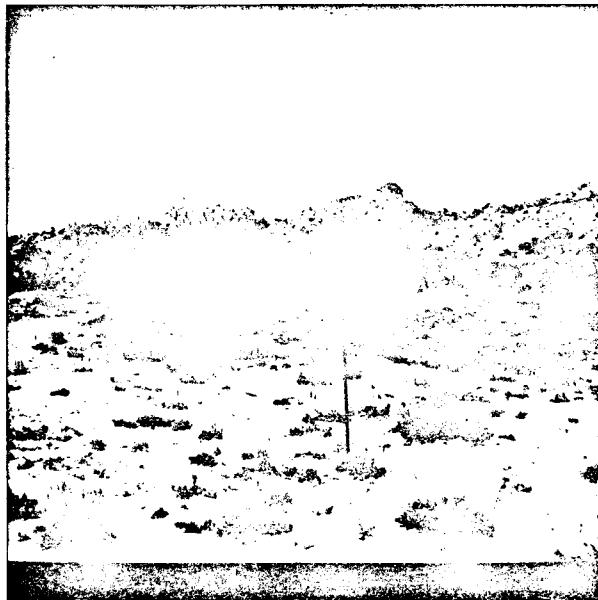
This requested action ~~does~~/does not constitute a major Federal action significantly affecting the environment in the sense of NEPA, Sec. 102(2)(C).

Date

1/16/78

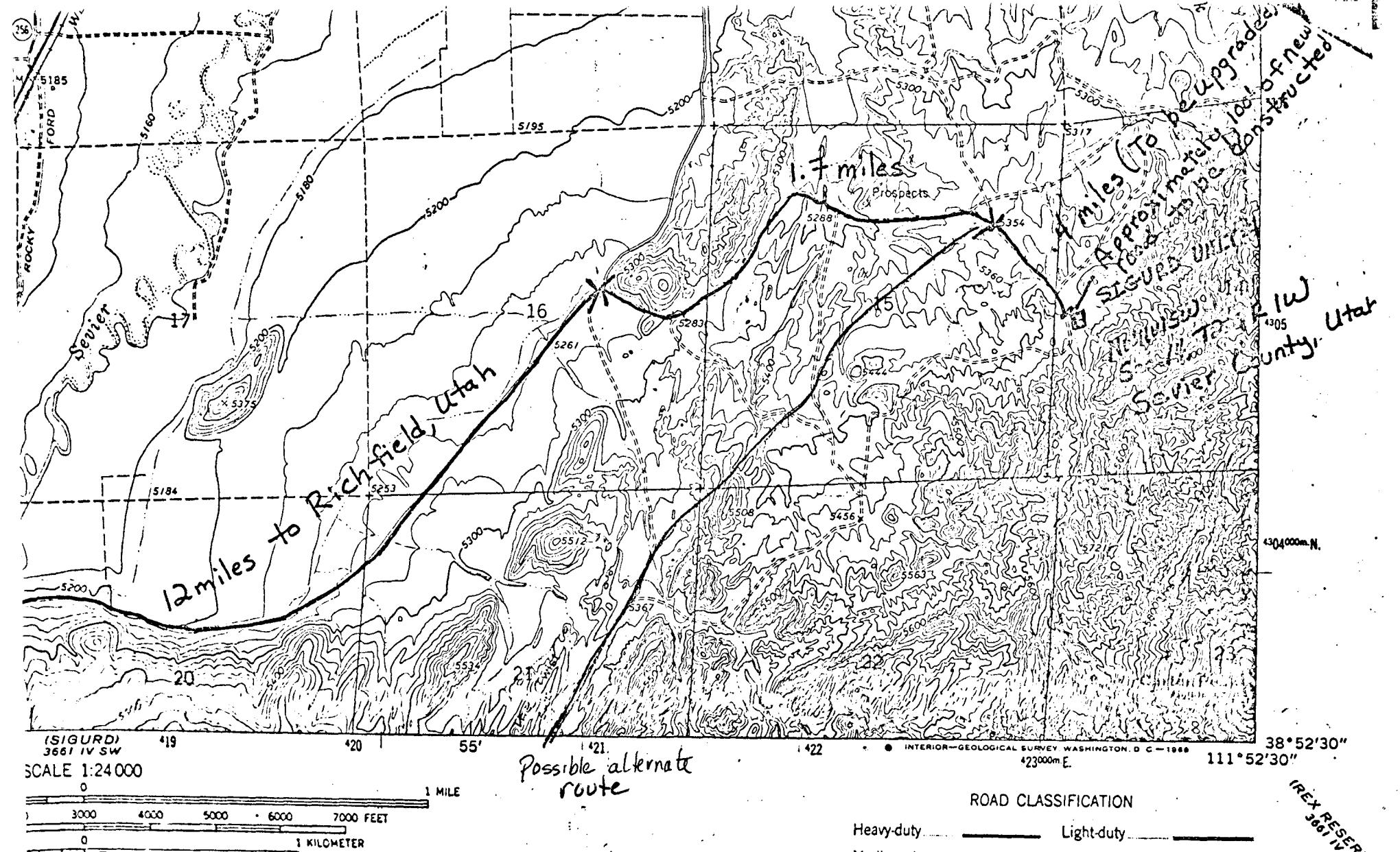
Elliott

District Engineer  
U.S. Geological Survey  
Conservation Division  
Oil and Gas Operations  
Salt Lake City District



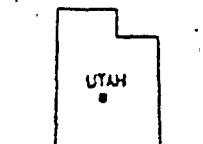
Forest Oil Corp.  
#1  
Sec 14 22S-1W

↑  
E



R INTERVAL 20 FEET  
 REPRESENT 10-FOOT CONTOURS  
 0 IS MEAN SEA LEVEL

NATIONAL MAP ACCURACY STANDARDS  
 DENVER, COLORADO 80223, OR WASHINGTON, D. C. 20242  
 MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

AURORA, UTAH  
N3852.5-W11152.5/7.5

1966

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

\*\* FILE NOTATIONS \*\*

Date: Jan. 6 -

Operator: Forest Oil

Well No: Sigurd Unit #1

Location: Sec. 14 T. 32S R. W County: Sheridan

File Prepared:

Entered on N.I.D.:

Card Indexed:

Completion Sheet:

API NUMBER: 43-041-30018

CHECKED BY:

Administrative Assistant SW

Remarks: No other wells - I own it

Petroleum Engineer M

Remarks:

Director F

Remarks:

INCLUDE WITHIN APPROVAL LETTER:

Bond Required:

Survey Plat Required:

Order No.

Surface Casing Change   
to

Rule C-3(c), Topographic exception/company owns or controls acreage  
within a 660' radius of proposed site

O.K. Rule C-3

O.K. In Sigurd Unit

Other:

Forest Oil Unit Agreement



Letter Written/Approved

Attn:



1645 Court Place  
Denver, Co. 80202

Suite 235

(303) 573-9593

January 4, 1978



State of Utah  
Division of Oil & Gas & Mining  
1588 W. North Temple  
Salt Lake City, Utah 84116

Re: Forest Oil Corporation  
Sigurd Unit # 1  
Sevier County, Utah

Gentlemen:

Enclosed please find two (2) copies of the above referenced Application for Permit to Drill. Please be advised that there is a lease expiration date of February 1, 1979. Your prompt attention to this matter would be appreciated.

We are also requesting an exception to the distance a well is required to be from a lease line. It is necessary due to the topography of the area.

If additional information is needed, please advise.

Very truly yours,

Kathy Patterson

/kp

Enclosures

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

## 18. TYPE OF WORK

DRILL DEEPEN PLUG BACK 

## b. TYPE OF WELL

OIL WELL GAS WELL 

OTHER W/C

SINGLE ZONE MULTIPLE ZONE 

## 2. NAME OF OPERATOR

Forest Oil Corporation

## 3. ADDRESS OF OPERATOR

821 17th Street  
700 Colorado Federal Bldg.- Denver, CO 80202

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At surface 392' FWL 2634' FNL Sec. 14 T22S, R1W

At proposed prod. zone

2862

same

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

4.5 miles Southeast of Aurora, Utah

## 15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.

397'

## 16. NO. OF ACRES IN LEASE

1267

## 17. NO. OF ACRES ASSIGNED TO THIS WELL

160

## 18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

## 19. PROPOSED DEPTH

8900' 8500'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

## 22. APPROX. DATE WORK WILL START\*

February 1, 1979

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|--------------|----------------|-----------------|---------------|--------------------|
| 17-1/2"      | 13-3/8"        | 48#             | 500'          | To surface         |
| 8 3/4"       | 5-1/2"         | 15.5 & 17#      | 8900' 8500'   | 350 sacks          |

APPROVED BY THE DIVISION OF  
OIL, GAS, AND MINING

DATE: 1-23-79

BY: Chm B. Lightfoot

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

Div. Drilling &amp; Prod. Mgr.

DATE: January 2, 1979

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

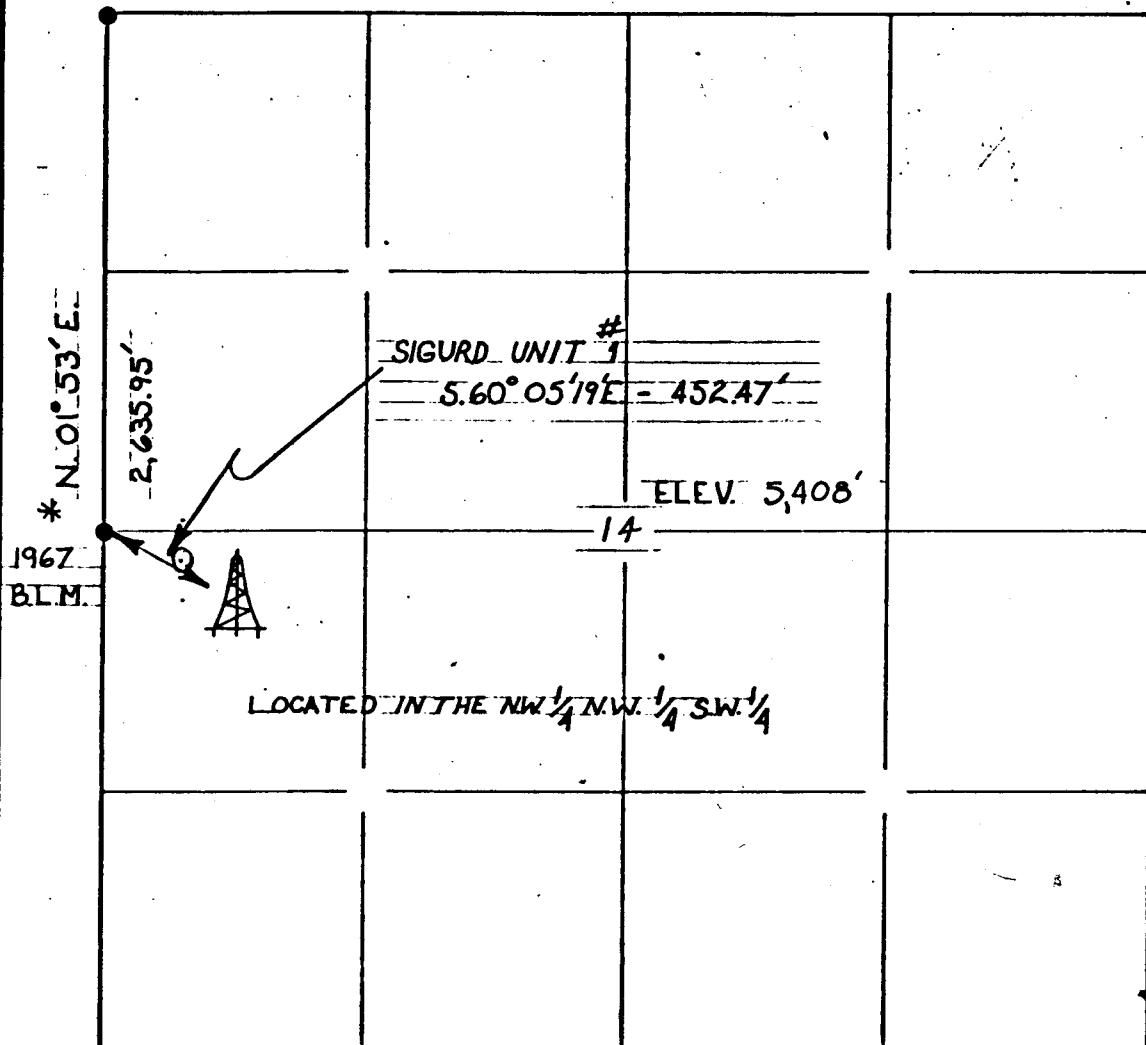
## WELL LOCATIO PLAT

SEC. 14 T. 22 S. R. 1 W.

SALT LAKE

BASE &amp; MERIDIAN

1967 BLM.



NORTH

SCALE : 1" = 1000'

## LEGEND:

- ◆ ORIGINAL STONES, FOUND
- ▲ WELL LOCATION
- BRASS CAP MONUMENT, FOUND
- - FENCE LINE

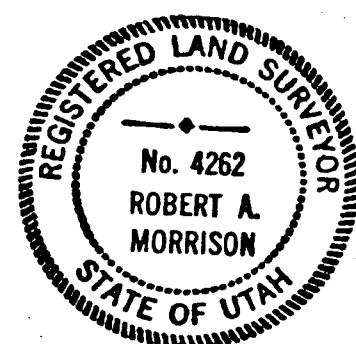
\* BASIS OF BEARING: G.L.O. BEARING FROM ORIGINAL SURVEY

## SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE ABOVE INDICATED MONUMENTS WERE FOUND, AND THAT THE ABOVE INFORMATION REPRESENTS A FIELD SURVEY DONE UNDER MY RESPONSIBLE CHARGE.

Robert A. Morrison

REGISTERED LAND SURVEYOR NO. 4262



VALLEY ENGINEERING, INC.  
INDUSTRIAL SURVEYORS  
801-621-1335

SERVING THE ENERGY  
INDUSTRY

CLIENT:

**ENVIROTEK**

1645 COURT PLACE - DENVER, COLO. 80202

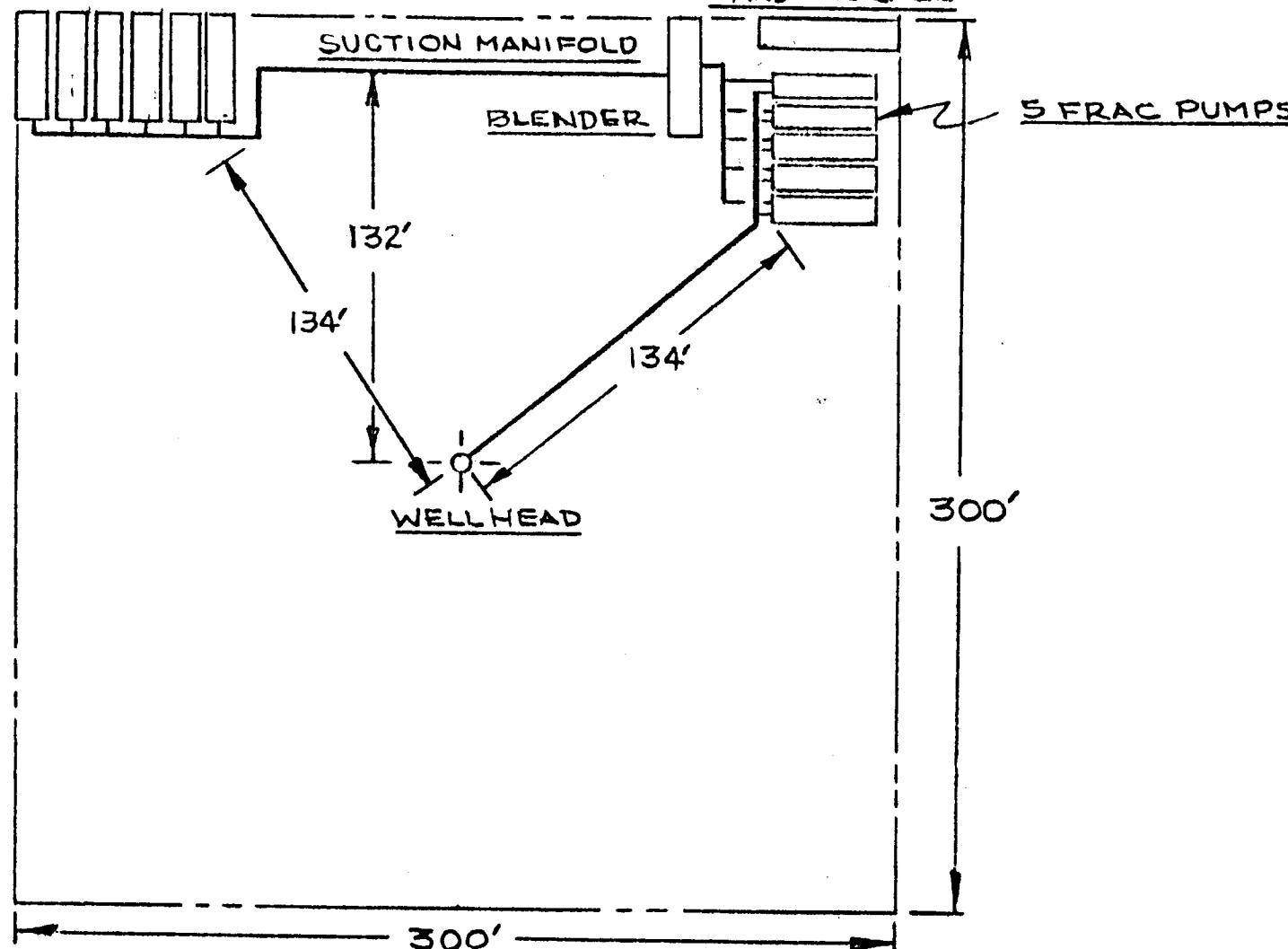
DATE  
12-22-78

PROJECT NO.  
30,086.01

P. O. NO.

6 FRAC TANKS

SAND STORAGE



## FRAC DIAGRAM

|   |                                  |                |
|---|----------------------------------|----------------|
| SCALE: 1" = 60'                           | APPROVED BY:<br><b>ENVIROTEK</b> | DRAWN BY REC   |
| DATE: 12-29-78                            | REVISED                          |                |
| WELL NO. SIGURD UNIT #1 ; LEASE U - 30650 |                                  |                |
| LOCATION: SEC 14 TWP 22S RANGE 1W         |                                  |                |
| FOREST OIL CORPORATION                    |                                  | DRAWING NUMBER |

BY D.M.J. DATE 1/24/8

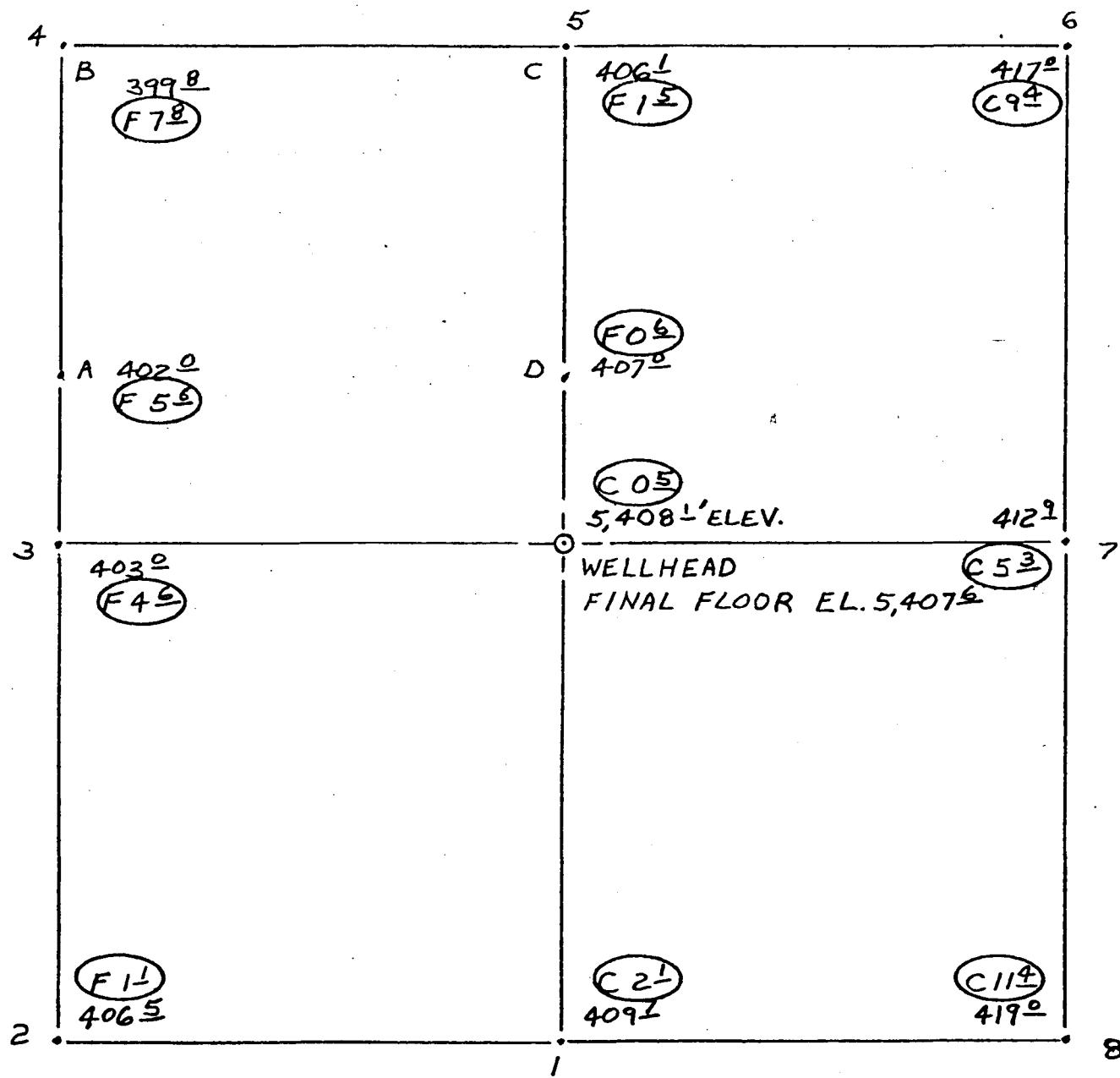
SUBJECT SIGURD UNIT #1 WELL  
CUT SHEET

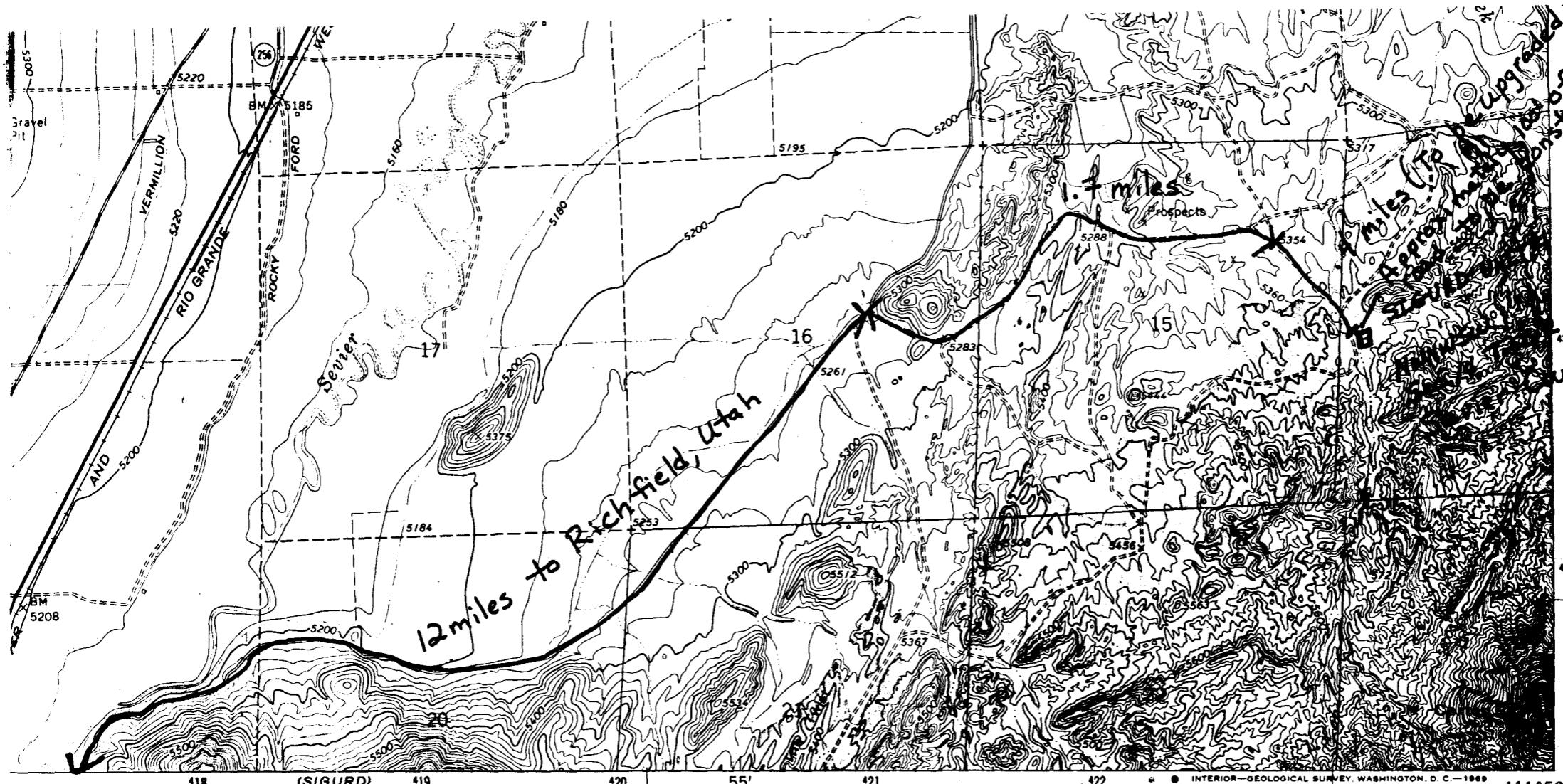
SHEET NO. 1 OF 1  
JOB NO. 30,086.01

VALLEY ENGINEERING, INC.  
830 North Main  
Richfield, Utah 84701

1" = 50'

LOCATED IN THE NW $\frac{1}{4}$ ,  
NW $\frac{1}{4}$ , SW $\frac{1}{4}$ , SEC. 14,  
T.22S., R.1W., S.L.B. & M.,  
9 MILES N.E. OF SIGURD,  
UTAH.





(To be upgraded)

(To be constructed)

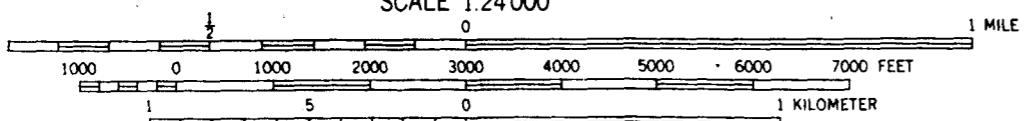
140  
County, Utah

4304000m N.

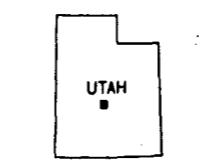
38°52'30"  
111°52'30"

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1969  
423000m E.

SCALE 1:24000



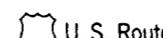
CONTOUR INTERVAL 20 FEET  
DOTTED LINES REPRESENT 10-FOOT CONTOURS  
DATUM IS MEAN SEA LEVEL



QUADRANGLE LOCATION

#### ROAD CLASSIFICATION

|             |                          |                 |                          |
|-------------|--------------------------|-----------------|--------------------------|
| Heavy-duty  | <input type="checkbox"/> | Light-duty      | <input type="checkbox"/> |
| Medium-duty | <input type="checkbox"/> | Unimproved dirt | <input type="checkbox"/> |



U. S. Route



State Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

AURORA, UTAH  
N3852.5—W11152.5/7.5

1966

AMS 3661 IV NW—SERIES V897

13 POINT SURFACE USE PLAN

FOR

WELL LOCATION

FOREST OIL CORPORATION  
Sigurd Unit #1

LOCATED IN

Section 14, T22S - R1W

Sevier County, Utah

1. Existing Roads

To reach the proposed Forest Oil Corporation location in Section 14, T22S - R1W, Sevier County, Utah, take the road which proceeds along the north end of Rocky Ford Reservoir. This road will follow the base of the mountains. Proceed northeast along this road for approximately 3.2 miles. There is an unimproved dirt road which circles on the South end of a butte. Proceed along this road to the fork. Turn left and proceed approximately 1.7 miles. There is a road which turns right. Take this road and proceed approximately .4 miles to the location which is on the east side of the road.

The last .4 mile of road will have to be upgraded in order to bring the equipment to the location. There will be approximately 100' of road to be constructed to the location site.

2. Planned Access Road

The maximum grade of the new road will be 1%. The maximum width will be 18'. No turnouts are required. No gates or cattleguards will need to be installed, nor will any fencelines have to be rerouted.

Since the road is on U.S. Gypsum property, they have requested that any new roads and upgrading of existing roads be left in their upgraded condition.

3. Location of Existing Wells

#1 Sigurd Unit (Abandoned) C NESE Sec. 32, T22S, R1W  
Standard of California  
#13-31 U.S.A. (Abandoned) NWSW Sec. 31, T22S, R1W  
Champlin Petroleum

4. Location of Existing and/or Proposed Facilities

A. Facilities Owned or Controlled by Operator within a One Mile Radius:

1. No tank batteries are owned or controlled by operator.
2. No production facilities are owned or controlled by operator.
3. No oil gathering lines are owned or controlled by operator.

4. No gas gathering lines are owned or controlled by operator.
5. No injection lines are owned or controlled by operator.
6. No disposal lines are owned or controlled by operator.

B. Contemplated Facilities in the Event of Production:

1. Location of tank battery will be on drilling location.
2. The tank battery will be approximately 100' x 150.
3. The tank battery will be constructed using a bulldozer to level site, backhoes to dig trenches and bury lines, and pole trucks, floats, and roustabout crews to maneuver and set facility equipment. Construction materials will consist of surface soil and gravel or shale as needed.
4. In order to protect livestock and wildlife, pits will be fenced and flagged. A pumping unit, if installed, will be fenced. Recycle pumps, if any, will be enclosed. A treater house will be erected.

C. Rehabilitation Plans:

Areas disturbed, but no longer needed for operations will be bladed to approximate original contours and reseeded with a seed mixture required by the Bureau of Land Management.

5. Location and Type of Water Supply

Water will be acquired from the Sevier River. It will be purchased from Mr. Doug Harwood.

6. Source of Construction Materials

- A. Construction materials will be obtained as much as possible from the actual location.
- B. The surface is Bureau of Land Management.
- C. If additional materials are needed, they will be purchased from a private source.
- D. No access roads for construction materials are necessary.

7. Methods for Handling Waste Disposal

- A. Cuttings not retained for evaluation purposes will be dumped in the reserve pit.
- B. Drilling fluids will be retained in the mud tanks or reserve pit.
- C. Produced water will be dumped to the reserve pit. Produced oil will either be collected in tanks or dumped to the reserve pit, depending on volume and occurrence. If the volume of oil is sufficient, it will be trucked from location.
- D. A portable toilet will be provided, and human waste will be buried after the operations are concluded. Sewage from trailer, if any, will be collected.
- E. Combustible materials will be burned in a fenced burn pit. Other waste materials will be collected in a fenced waste pit. Both pits will be covered at the conclusion of operations.

8. Ancillary Facilities

No camps or airstrips will be constructed. Portable trailers will be parked on the drilling location in area shown on the Rig Plat.

9. Well Site Layout

See attached location layout sheet. The BLM District Manager or other appropriate agencies shall be notified before any construction begins on the proposed location site. When Drilling activities commence, all work shall proceed in a neat and orderly sequence.

Also see attached layout for frac operation.

10. Plans for Restoration of Surface

Upon completion of operation, and if well is to be abandoned, the location will be backfilled, leveled, and contoured to as nearly the original topography as is feasible. Any waste material which can be buried without causing environmental damage will be collected and buried in the burn/or reserve pit. Any other waste will be taken to a sanitary landfill for disposal. During drilling operations the reserve pit will be fenced on three sides. Only the rig side will remain unfenced. The remaining side will be fenced as soon as the rig equipment is moved to allow fencing crews access. This fence will be kept sheep tight and kept in good repair until final cleanup is undertaken. Any oil on the reserve pit will be removed or overhead flagging installed

to prevent birds from landing. The top soil will be evenly spread over the entire location after contouring is complete. The area will then be reseeded with recommendations from the surface owner and/or BLM. All access roads built by Forest Oil Corporation will be rehabilitated the same as the location.

Ninety days after completion of drilling and completion operation, the surface will be recontoured in such a manner as not to interfere with production activities. Re-seeding, if any needed, shall take place in the fall, or at the instruction of the BLM District Manager.

11. Other Information

The topography of the general area is mountainous. The soil of the area is arid. The major vegetation in the area is sagebrush and other native grasses. There is some scrub cedar which will need to be removed. The fauna of this area consists of deer, rabbits and field mice.

There are no occupied dwellings or other facilities of this nature in the general area. There are no visible archaeological, historical or cultural sites within any reasonable proximity of the proposed location site.

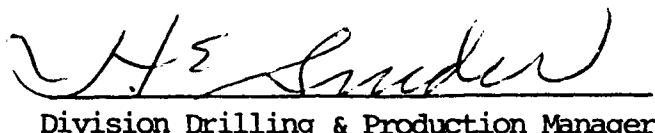
12. Lessee's or Operator Representative

|  |   |
|--|---|
| Envirotek<br>1645 Court Place<br>Denver, CO 80202<br>(303) 573-9593<br>Kathy Patterson | Forest Oil Corporation<br>700 Colorado Federal Bldg.<br>821 17th St.<br>Denver, CO 80202<br>(303) 534-0506<br>Mr. H.E. Snyder |
|--|---|

13. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Forest Oil Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Forest Oil Corporation



H.E. Snyder  
Division Drilling & Production Manager

Forest Oil Corporation

TEN POINT (10) RESOURCE PROTECTION PLAN

Well : Sigurd Unit #1  
Location : Section 14, T 22 S, R 1 W  
County & State : Sevier County, Utah  
Federal Lease Number : U-30650

1. Geologic Name of Surface Formation:

Arapien Shale TO 6600'

2. Estimated Tops of Important Geologic Markers:

|                      |       |
|----------------------|-------|
| Twin Creek Limestone | 6600' |
| Navajo - Nugget      | 7000' |
| Cayenta Wingate      | 8200' |

3. Estimated Depths of Mineral Bearing Formations:

Of the formations listed above, it is anticipated that the Twin Creek and Navajo Nugget may be oil or gas bearing in this well.

If any water flows are encountered, they will be adequately protected and reported.

4. Casing Program

Surface Casing

13 3/8" 48# K-55 LTC to be set at 500' and cemented

Production Casing

15.5 # & 17# K-55 LTC, to be set  
8900' and cemented with 350 sacks

Cement Program

Surface: Cement to surface

Production: 350 sacks Class G

5. Operators Minimum Specifications for Blowout Equipment:

The blowout preventor specifications and schematic is attached hereto as a separate exhibit (Exhibit "A"). BOP to be tested to at least the designed working pressure which in this case is 1000 psi, and such tests shall be run prior to drilling out from under surface pipe and each day thereafter until well has reached total depth.

6. Drilling Fluids:

| <u>Depth</u> | <u>Type</u> | <u>Weight</u> | <u>Viscosity</u> | <u>Fluid Loss</u> |
|--------------|-------------|---------------|------------------|-------------------|
| 0- 500'      | Water       |               |                  |                   |
| 500'-T. D.   |             | 8.5-10#       | 34-38            | Less than 10 ml   |

7. Auxillary Equipment:

- A. Kelly Cock.
- B. Bit floats will be available
- C. Monitoring of mud system will be done with PVT and flow sensor as well as visually.
- D. Full opening floor valve with drill pipe thread.

8. Logging Program:

DIL w/Caliper - B/Surface Pipe - Total Depth

Neutron Density w/GR - Surface Pipe - Total Depth

Coring Program : None Planned

DST Program : As needed

9. Abnormal Pressure, Temperature, Potential Hazards:

This well is not expected to have any abnormal pressures and the hydrostatic head provided by the 8.5-10.0 # mud weight should be more than adequate to control any sub-surface pressures encountered.

No potential hazards such as H<sub>2</sub>S gas is anticipated.

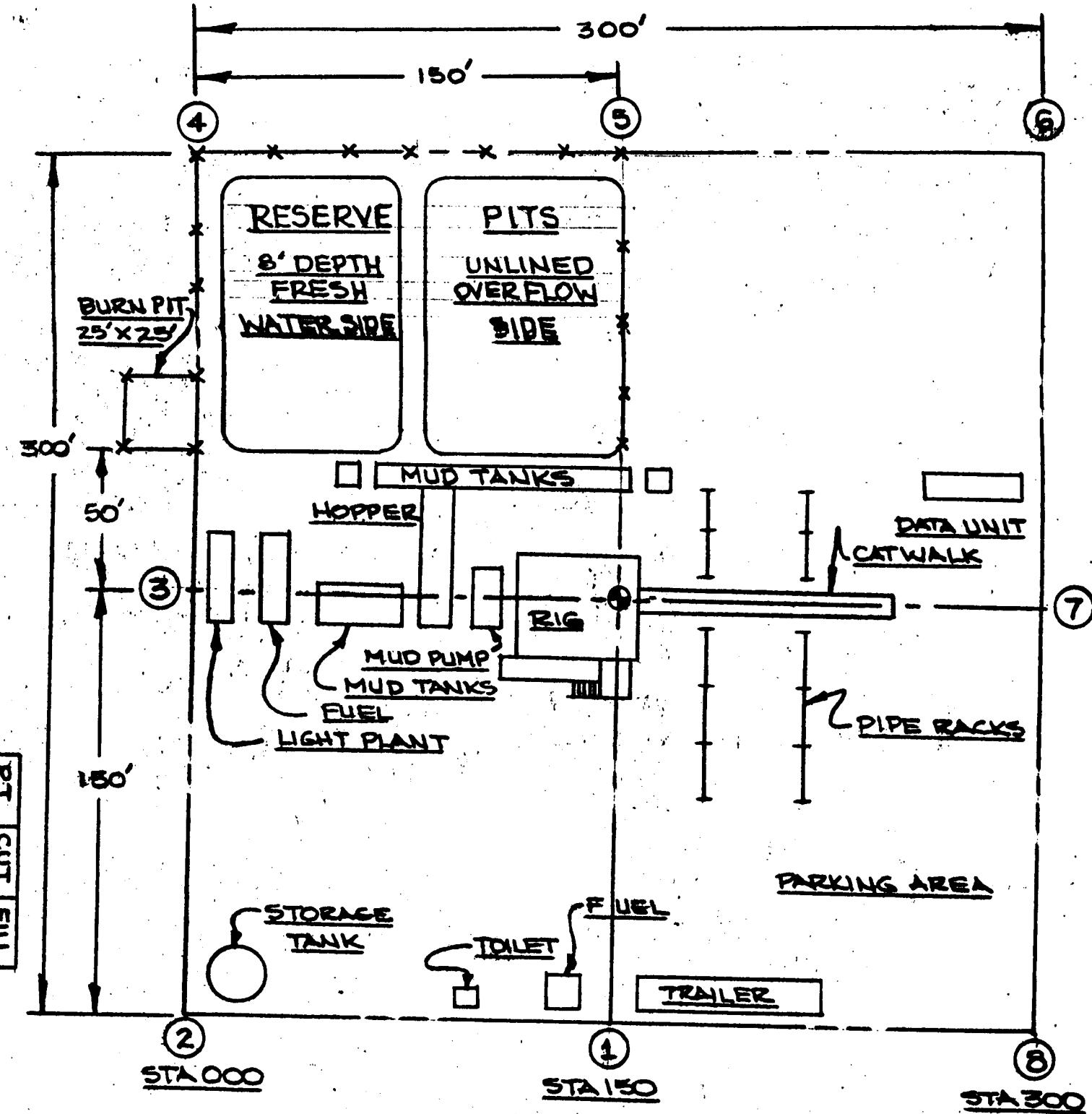
10. Starting Date - Completion:

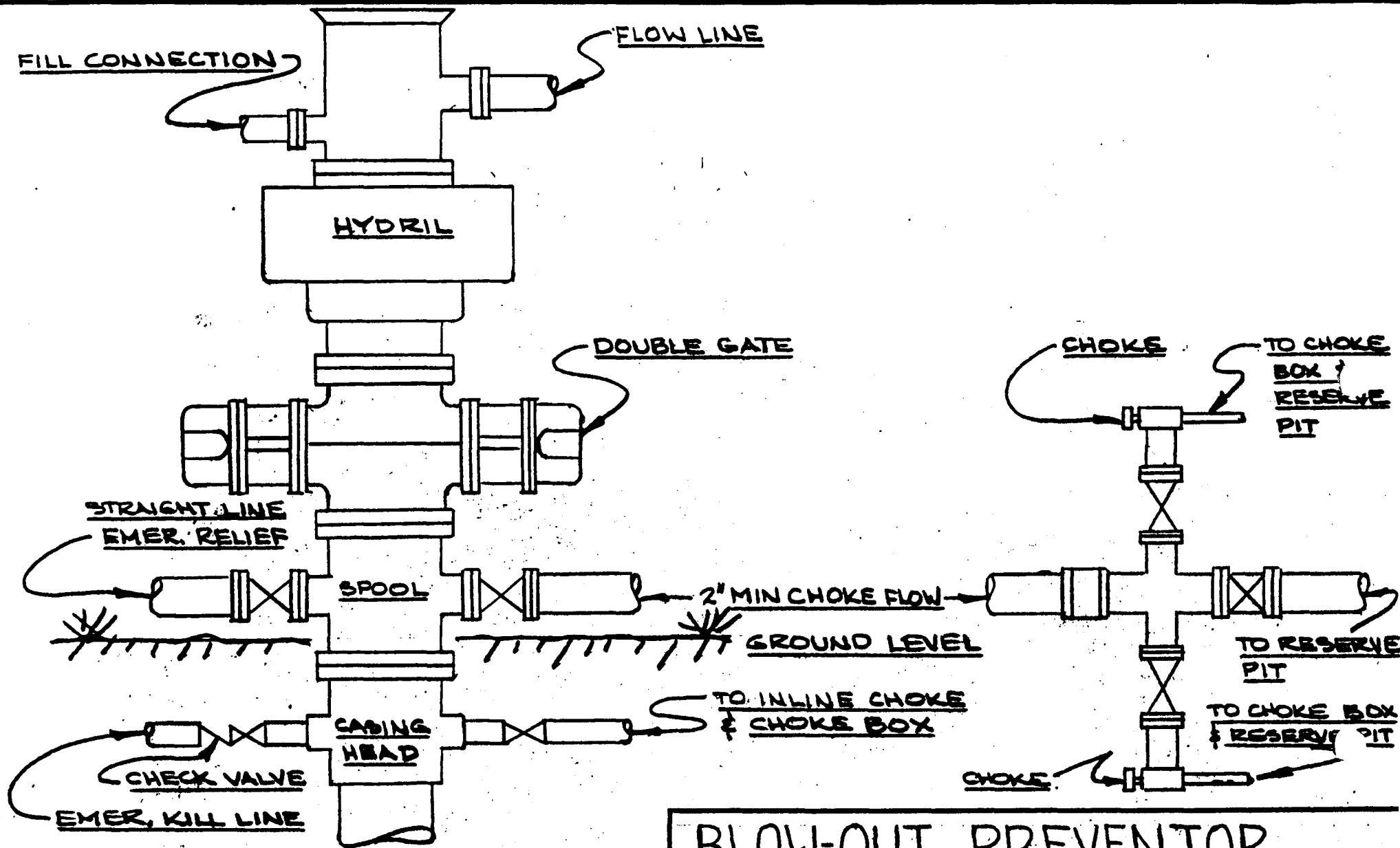
This well must be spudded by February 1, 1979 due to lease expirations. An estimated 21 days will be required for drilling operations.

LOCATION: SEC 14; T.R.S: RANGE 1W  
 SIGURD UNIT #1; FEDERAL U-30650  
 DATE: 1-2-79  
 SCALE: 1":50'  
 BY ENVIROTEK

### LOCATION LAYOUT

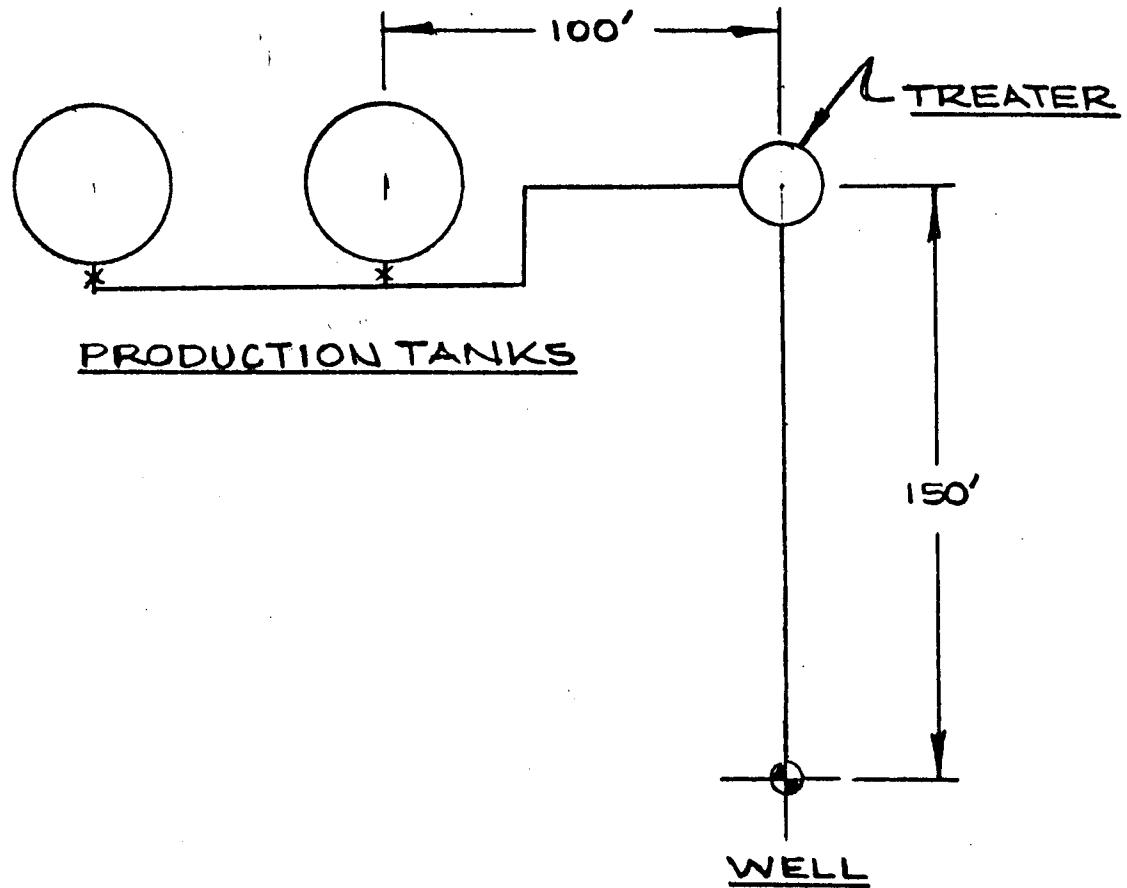
|    | PT  | CUT | FILL |
|----|-----|-----|------|
| WH | 0   | 0   | 0    |
| 8  | 112 | 92  | 72   |
| 7  | 52  | 32  | 12   |
| 6  | 32  | 12  | 0    |
| 5  | 12  | 0   | 0    |
| 4  | 0   | 0   | 0    |
| 3  | 0   | 0   | 0    |
| 2  | 0   | 0   | 0    |





## BLOW-OUT PREVENTOR

|                |                                  |                         |
|----------------|----------------------------------|-------------------------|
| SCALE: NONE    | APPROVED BY:<br><b>ENVIROTEK</b> | DRAWN BY REC<br>REVISED |
| DATE:          |                                  |                         |
| WELL NO.       | LEASE                            |                         |
| LOCATION: SEC. | TWP.                             | RANGE                   |
|                |                                  | DRAWING NUMBER          |



## PRODUCTION FACILITIES (OIL)

|                                |                  |                |
|--------------------------------|------------------|----------------|
| SCALE: 1": 50"                 | APPROVED BY:     | DRAWN BY REC   |
| DATE: 12-29-78                 | <u>ENVIROTEK</u> | REVISED        |
| WELL NO: SIGURD UNIT #1        |                  | LEASE: U 30650 |
| LOCATION: SEC 14 TWP 22S RG 1W |                  |                |
| FOREST OIL CORPORATION         |                  | DRAWING NUMBER |

U. S. GEOLOGICAL SURVEY - CONSERVATION DIVISION

FROM: : DISTRICT GEOLOGIST, U. S. SALT LAKE CITY, UTAH

TO : DISTRICT ENGINEER, O&G, SALT LAKE CITY, UTAH

SUBJECT: APD MINERAL EVALUATION REPORT

LEASE NO. U-30650

OPERATOR: Forest Oil Corporation

WELL NO. 1

LOCATION: 1/4 SW 1/4 NW 1/4 sec. 14, T. 22 S., R. 1 W., SIM

Sevier County, Utah

1. Stratigraphy: Operator projected tops appear reasonable. Standard Oil Co. of California well no. 1 Sigurd Unit (section 32 same Twp.) reports top of Navajo SS at 8997.

2. Fresh Water: Water wells in the area are shallow (< 500') and any aquifers in the Arapien shale are likely to yield saline water.

3. Leasable Minerals: Some salt beds may be encountered in the Arapien, but none are likely to be of economic significance.

4. Additional Logs Needed: APD program adequate

5. Potential Geologic Hazards: None anticipated.

6. References and Remarks: The well is being drilled on lands that were patented as mining claims for gypsum. A possible conflict could result between the proposed drilling and gypsum mining operations. It is not known if the area is being mined at present. REF: USGS Map I-591, UGMS Bull. 43, USGS files, Salt Lake City, Utah

Signature: J. M. F. H. M.

Date: 01 - 04 - 79

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE\*  
(Other instructions on reverse side)Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

## SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)1. OIL  GAS  WELL  OTHER Wildcat2. NAME OF OPERATOR  
Forest Oil Corporation3. ADDRESS OF OPERATOR  
821 17th St. Denver, Colorado 802024. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface392' FWL, 2634' FNL Section 14, T22S, R1W  
2860?!

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

5408 ungr.

12. COUNTY OR PARISH 13. STATE  
Sevier Utah

## 16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL  
(Other)

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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|   |
| X |

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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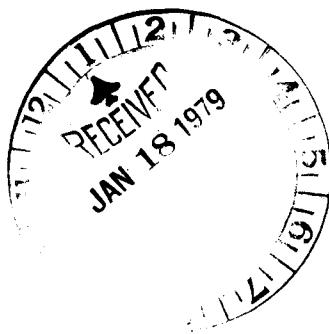
REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) \*

The Total Depth of the proposed well will be 8500'

It is also anticipated that it will take 90 days to drill the proposed well,  
as opposed to the 21 days indicated on the original 13 Point Program.State of Utah, Department of Natural Resources  
Division of Oil, Gas, and Mining  
1583 West North Temple  
Salt Lake City, Utah 84116

API 43-041-30018

18. I hereby certify that the foregoing is true and correct

SIGNED H.E. Snyder

TITLE Div. Drilling &amp; Prod. Mgr. DATE January 10, 1979

(This space for Federal or State office use)

APPROVED BY W.P. Martin  
CONDITIONS OF APPROVAL, IF ANY:

TITLE ACTING DISTRICT ENGINEER

DATE JAN 16 1979

CONDITIONS OF APPROVAL ATTACHED  
TO OPERATOR'S COPY

## NOTICE OF APPROVAL

\*See Instructions on Reverse Side

NECESSARY FLARING OF GAS DURING  
DRILLING AND COMPLETION APPROVED  
SUBJECT TO ROYALTY (NTL-4)

State OG G

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE.  
(Other instructions on re-  
verse side)Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

## SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202  
See also space 17 below.  
At surface2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

## 16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

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FRACTURE TREAT

PULL OR ALTER CASING

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SHOOT OR ACIDIZE

MULTIPLE COMPLETE

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REPAIR WELL

ABANDON\*

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(Other)

CHANGE PLANS

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Progress Report

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF

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REPAIRING WELL

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FRACTURE TREATMENT

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ALTERING CASING

SHOOTING OR ACIDIZING

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ABANDONMENT\*

(Other)

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

2/9/79 - Drilling @ 1929' 8-3/4" hole

Reamed 17½" hole to 710' K.B. Ran 18 jts - 13-3/8", 48#, H40, Sh T & C new casing 715' set @ 710' K.B. Cemented w/450 sks Howco light cement & 250 sks Class H with ½#/sk floccel & 2% calcium chloride. Good returns. Plug down @ 10AM, 2/3/79. Bumped plug w/900#. Tested BOP's, casing & manifold w/1000# Held O.K. on 2/6/79

18. I hereby certify that the foregoing is true and correct

SIGNED

*J. S. Snider*

TITLE Div. Drilg. &amp; Prod. Mgr.

DATE 2/9/79

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

Form approved.

Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME



7. UNIT AGREEMENT NAME

Sigurd Unit

8. FARM OR LEASE NAME

Sigurd Unit

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND  
SURVEY OR AREA

14-T22S-R1W

12. COUNTY OR PARISH 13. STATE

Sevier

Utah

1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

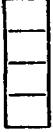
15. ELEVATIONS (Show whether DP, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

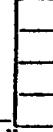
16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELLPULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other) \_\_\_\_\_REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) \*

2/16/79 - Depth 2910' Drilling. Lime &amp; Siltstone.

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. &amp; Prod. Mgr.

DATE 2/16/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

RECEIVED

FEB 26 1979

GAS, & MINING

C

1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DE, RT, CR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

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FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other) Progress Report

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

2/23/79 - Depth 3659' Drilling

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 2/23/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

3. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

Sigurd Unit

8. FARM OR LEASE NAME

Sigurd Unit

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK., AND  
SURVEY OR AREA

14-T22S-R1W

1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)

At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

12. COUNTY OR PARISH

Sevier

13. STATE

Utah

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

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FRACTURE TREAT

PULL OR ALTER CASING

MULTIPLE COMPLETE

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SHOOT OR ACIDIZE

ABANDON\*

REPAIR WELL

CHANGE PLANS

(Other) Progress Report

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

REPAIRING WELL

FRACTURE TREATMENT

ALTERING CASING

SHOOTING OR ACIDIZING

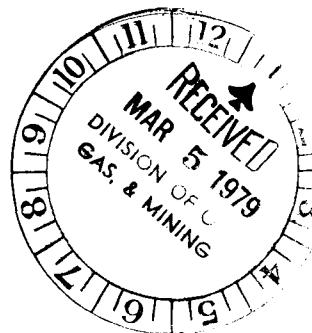
ABANDONMENT\*

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

3/2/79 - Depth 4612' Drilling



18. I hereby certify that the foregoing is true and correct

SIGNED

*J. Smoker*

TITLE Div. Drdg. & Prod. Mgr.

DATE 3/2/79

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE\*  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVE

MAR 12 1979

GAS, & M.W.

1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)

At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

13. STATE

Sevier Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

FULL OR ALTER CASING

SHOOT OR ACIDIZE

MULTIPLE COMPLETE

WATER SHUT-OFF

REPAIRING WELL

REPAIR WELL

ABANDON\*

FRACTURE TREATMENT

ALTERING CASING

(Other) Progress Report

CHANGE PLANS

SHOOTING OR ACIDIZING

ABANDONMENT\*

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

3/9/79 - Depth 5440 Drilling

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE

Div. Drilg. & Prod. Mgr.

DATE 3/9/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.  
5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL  GAS  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL  
(Other) Progress Report

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

3/16/79 - Depth 6171' Inspecting BHA

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drdg. & Prod. Mgr.

DATE 3/16/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.  
5. LEASE DESIGNATION AND SERIAL NO.

**SUNDRY NOTICES AND REPORTS ON WELLS**

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DR. RT. CR. etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND  
SURVEY OR AREA

14-T22S-R1W

12. COUNTY OR PARISH 13. STATE

Sevier

Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other) \_\_\_\_\_

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work).\*

3/23/79 - Depth 7091' Washing & reaming @ 6690'

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 3/23/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

b7

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

SUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

**U-30650**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

**SUNDRY NOTICES AND REPORTS ON WELLS**

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, ET, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) \*

3/29/79 - Depth 7131 Drilling

APR 2 1979

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 3/29/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE.  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

Sigurd Unit

8. FARM OR LEASE NAME

Sigurd Unit

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK., AND  
SURVEY OR AREA

14-T22S-R1W

12. COUNTY OR PARISH 13. STATE

Sevier

Utah

1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)

At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other) Progress Report

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

4/5/79 - Depth 7337' Down for rig repairs.

APR 9 1979

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 4/5/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUMMIT IN TRIPPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

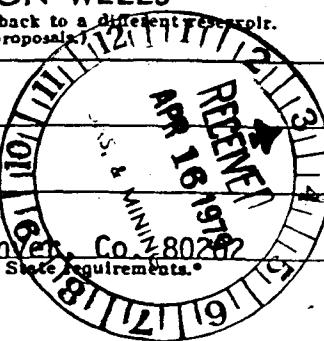
5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)



1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR Forest Oil Corporation

3. ADDRESS OF OPERATOR 700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, ST, CR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16. COUNTY OR PARISH STATE  
Sevier Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

4/13/79 - Depth 7678' Tripping

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 4/13/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
See also space 17 below.)

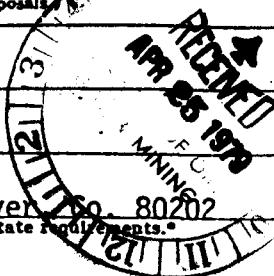
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DEP, HT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'



16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

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FRACTURE TREAT

PULL OR ALTER CASING

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SHOOT OR ACIDIZE

MULTIPLE COMPLETE

REPAIR WELL

ABANDON\*

(Other) Progress Report

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

REPAIRING WELL

FRACTURE TREATMENT

ALTERING CASING

SHOOTING OR ACIDIZING

ABANDONMENT\*

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

4/20/79 Depth 8360' Drilling

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 4/20/79

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE\*  
(Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

RECEIVED

APR 30 1979

DIVISION OF OIL,  
GAS. & MINING

1. OIL  GAS  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, CO 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL  
(Other) Progress Report

PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

4/27/79 - Depth 8525' Fishing

18. I hereby certify that the foregoing is true and correct

SIGNED

*F. Snider*

TITLE Div. Drdg. & Prod. Mgr.

DATE 4/27/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

RECEIVED

MAY 7 1979

DIVISION  
GAS, & MINING

1. OIL WELL  GAS WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202  
See also space 17 below.  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DV, RT, CR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

7. UNIT AGREEMENT NAME

Sigurd Unit

8. FARM OR LEASE NAME

Sigurd Unit

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND

SURVEY OR AREA

14-T22S-R1W

12. COUNTY OR PARISH 13. STATE

Sevier

Utah

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

PULL OR ALTER CASING

FRACTURE TREAT

MULTIPLE COMPLETE

SHOOT OR ACIDIZE

ABANDON\*

REPAIR WELL

CHANGE PLANS

(Other) Progress Report

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Other)

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

5/4/79 - Depth 8525' Preparing to run 7"OD casing to 8525'

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 5/4/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE\*  
(Other Instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT" for such proposals.)

1. OIL  GAS  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, CR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

12. COUNTY OR PARISH 13. STATE

Sevier

Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other) \_\_\_\_\_

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

5/11/79 Depth 8628' Drilling



18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE 5/11/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

MAY 21 1979  
RECEIVED

DIVISION  
GAS & M

1. OIL  
WELL  GAS  
WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, RT, CR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

12. COUNTY OR PARISH 13. STATE  
Sevier Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other) Progress Report

FULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

5/18/79 - Depth 9031' Picking up core barrel.

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE

5/18/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY: \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE\*  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL  GAS  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DP, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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(Other) Progress Report

SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

5/25/79 - TD 9080' PBTD - Testing 7"OD casing set @ 8525'.

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drilg. & Prod. Mgr.

DATE

5/25/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_



**REPORT  
of  
SUB-SURFACE  
DIRECTIONAL  
SURVEY**



Forest Oil  
COMPANY

Sigard Unit #1 Well #1  
WELL NAME

Sevier, Utah  
LOCATION

| <u>JOB NUMBER</u> | <u>TYPE OF SURVEY</u> | <u>DATE</u> |
|-------------------|-----------------------|-------------|
| RM579-C0732       | Corex                 | 5-19-79     |

**SURVEY BY**  
Jim Wildemann & Stan Offerle

**OFFICE**  
Rocky Mountain



SCOTT M. MATHESON  
Governor



OIL, GAS, AND MINING BOARD

GORDON E. HARMSTON  
*Executive Director,*  
NATURAL RESOURCES

CHARLES R. HENDERSON  
*Chairman*

CLEON B. FEIGHT  
*Director*

JOHN L. BELL  
C. RAY JUVELIN  
THADIS W. BOX  
CONSTANCE K. LUNDBERG  
EDWARD T. BECK  
E. STEELE McINTYRE

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS, AND MINING  
1588 West North Temple  
Salt Lake City, Utah 84116  
(801) 533-5771

June 4, 1979

Forest Oil Corporation  
700 Colorado Federal Bldg.  
821 17th Street  
Denver, Colorado 80202

Re: Well No. Sigurd Unit #1  
Sec. 14, T. 22S, R. 1W  
Sevier County, Utah

Gentlemen:

We are in receipt of your Sundry Notice: "Notice of Intention to Abandon" for the above mentioned well which has been marked "Confidential". Please refer to Rule C-5 (b), General Rules and Regulations and Rules of Practice and Procedure.

In order to hold this information confidential, we must have a letter from your company requesting that this data be withheld from open file. If we do not hear from you by June 25, 1979, we will assume that the information can be released.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

*Kathy Avila*  
KATHY AVILA  
RECORDS CLERK

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE.  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL  GAS  WELL  OTHER Wildcat Well

2. NAME OF OPERATOR

Forest Oil Corporation

3. ADDRESS OF OPERATOR

700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

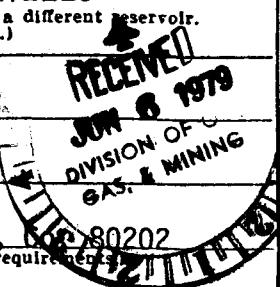
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S - R1W

14. PERMIT NO.

15. ELEVATIONS (Show top of well, st. etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'



CONFIDENTIAL

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL  
(Other)

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PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

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SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

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REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

|   |
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|   |
| X |
|   |
|   |

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

The above described well was plugged as follows: TD 9080', 7" casing set at 8525'.

CIBP(cast iron bridge plug) set at 8470' with 3 sacks cement on top of plug. Perforated 7" casing 8370'-8400'. Tested. Recovered water. No oil or gas. CIBP at 7520' w/3 sacks cement on top of plug. Perforated 7" casing 7390'-7420'. Tested. Recovered water. No oil or gas. Set CIBP at 7300' with 3 sacks cement on top of plug. Perforated 7" casing 7210'-7240'. Tested. Recovered water. No oil or gas. Set CIBP at 7150' with 3 sacks cement on top of plug. Set dry hole marker with 10 sacks cement. Rig released at 12 noon, 5/29/79.

The formation from 0' to TD 9080' was Arapien.

CONFIDENTIAL

18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drdg. & Prod. Mgr.

DATE 6/4/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

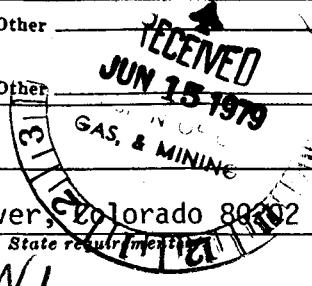
~~CONFIDENTIAL~~

SUBMIT IN DUPLICAT

DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY(See other in-  
structions on  
reverse side)Form approved.  
Budget Bureau No. 42-R355.6

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

|   |   |   |   |
|---|---|---|---|
| 1a. TYPE OF WELL:   | OIL WELL <input type="checkbox"/>   | GAS WELL <input type="checkbox"/>                                   | DRY <input checked="" type="checkbox"/> Other _____ |
| b. TYPE OF COMPLETION:  | NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/>   | DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> | DIFF. EESVR. <input type="checkbox"/> Other _____   |
| 2. NAME OF OPERATOR   | Forest Oil Corporation  |   |   |
| 3. ADDRESS OF OPERATOR  | 700 Colorado Fed. Bld., 821 17th St., Denver, Colorado 80202  |   |   |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) | At surface <del>2412</del> FSL & 392' FWL Sec 14-T22S-R1W At top prod. interval reported below Same At total depth Same |   |   |
| 15. DATE SPUNDED  | 16. DATE T.D. REACHED   | 17. DATE COMPL. (Ready to prod.)                                    | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)              |
| 1/29/79   | 5/19/79   | P&A 5/29/79   | K.B. 5428'  |
| 20. TOTAL DEPTH, MD & TVD   | 21. PLUG, BACK T.D., MD & TVD   | 22. IF MULTIPLE COMPL., HOW MANY                                    | 23. INTERVALS DRILLED BY                            |
| 9080'   | P&A   | P&A   | → ROTARY TOOLS 0 CABLE TOOLS 9080'                  |



|   |   |                    |
|---|---|--------------------|
| 14. PERMIT NO.  | DATE ISSUED   |                    |
| Release dt: 12/29/79  |   |                    |
| 12. COUNTY OR PARISH  | 13. STATE   |                    |
| Sevier  | Utah  |                    |
| 24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* | 25. WAS DIRECTIONAL SURVEY MADE   |                    |
| P&A   | No  |                    |
| 26. TYPE ELECTRIC AND OTHER LOGS RUN  | Dual Induction-SP, Density-Neutron-Gamma Ray,<br>Sonic-Gamma Ray & Dipmeter | 27. WAS WELL CORED |
|   |   | Yes                |

| CASING RECORD (Report all strings set in well) |                 |                |           |                  |               |
|--|-----------------|----------------|-----------|------------------|---------------|
| CASING SIZE                                    | WEIGHT, LB./FT. | DEPTH SET (MD) | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
| 13-3/8"  | 48              | 710'           | 17½"      | 700 sks          | 0             |
| 7"   | 26 & 29         | 8525'          | 8-3/4"    | 750 sks          | 0             |

| LINER RECORD |          |             |               |             | TUBING RECORD |                |                 |
|--------------|----------|-------------|---------------|-------------|---------------|----------------|-----------------|
| SIZE         | TOP (MD) | BOTTOM (MD) | SACKS CEMENT* | SCREEN (MD) | SIZE          | DEPTH SET (MD) | PACKER SET (MD) |
| None         |          |             |               |             | None          |                |                 |

|  |  |
|--|--|
| 31. PERFORATION RECORD (Interval, size and number)   | 32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.               |
| 8400'-8370' w/2 jets/ft - tested<br>7420'-7390' w/2 jets/ft - water<br>7240'-7210' w/2 jets/ft - water | DEPTH INTERVAL (MD) AMOUNT AND KIND OF MATERIAL USED<br>None |

| PRODUCTION            |  |            |                         |          |                                    |            |               |
|-----------------------|--|------------|-------------------------|----------|------------------------------------|------------|---------------|
| DATE FIRST PRODUCTION | PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) |            |                         |          | WELL STATUS (Producing or shut-in) |            |               |
| P&A                   | None   |            |                         |          |                                    |            |               |
| DATE OF TEST          | HOURS TESTED   | CHOKE SIZE | PROD'N. FOR TEST PERIOD | OIL—BBL. | GAS—MCF.                           | WATER—BBL. | GAS-OIL RATIO |

|                     |                 |                         |          |          |            |                         |
|---------------------|-----------------|-------------------------|----------|----------|------------|-------------------------|
| FLOW. TUBING PRESS. | CASING PRESSURE | CALCULATED 24-HOUR RATE | OIL—BBL. | GAS—MCF. | WATER—BBL. | OIL GRAVITY-API (CORR.) |
|                     |                 | →                       |          |          |            |                         |

|  |                   |
|--|-------------------|
| 34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) | TEST WITNESSED BY |
|--|-------------------|

|                         |
|-------------------------|
| 35. LIST OF ATTACHMENTS |
|-------------------------|

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED HF Snider TITLE Div. Drdg. & Prod. Mgr. DATE 6/12/79

\*(See Instructions and Spaces for Additional Data on Reverse Side)

## INSTRUCTIONS

**General:** This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on Items 22 and 24, and 33, below regarding separate reports for separate completions. If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see Item 35.

**Item 4:** If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

**Item 18:** Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

**Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in Item 22, and in Item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in Item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

**Item 29:** "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

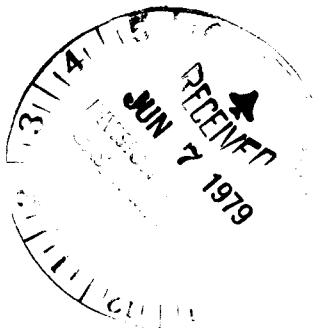
| 37. SUMMARY OF POROUS ZONES :<br>SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING<br>DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES |     |        |                             | 38.<br>GEOLOGIC MARKERS   |
|--|-----|--------|-----------------------------|---|
| FORMATION  | TOP | BOTTOM | DESCRIPTION, CONTENTS, ETC. | TOP   |
|  |     |        |                             | NAME  |
| Jurassic<br>Arapien  | 0   | 9080'  | Ls., Ss & Sh                |   |
|  |     |        |                             | Note: Copies of all logs, DST's & cores will be sent directly to your office. |

COMPANY FOREST OIL CORPORATION WELL SIGARD UNIT #1 TEST NO. 3 COUNTY SEVIER STATE UTAH

JOHNSTON

Schlumberger

**technical  
report**



F.R. #13825 D

----- WELL IDENTIFICATION -----

|                |  |                                |
|----------------|--|--------------------------------|
| COMPANY:       | FOREST OIL CORPORATION<br>P.O. BOX 1310<br>CASPER, WYOMING 82602 | CUSTOMER: SAME                 |
| WELL:          | SIGARD UNIT #1   | LOCATION: SEC. 14 - T22S - R1W |
| TEST INTERVAL: | 7210' TO 7240'   | FIELD: WILD CAT                |
| TEST NO:       | 3  | TEST DATE: 5-27-79             |
| COUNTY:        | SEVIER   | STATE: UTAH                    |
| TECHNICIAN:    | RICHARDS (VERNAL)  | TEST APPROVED BY: -            |

----- EQUIPMENT AND HOLE DATA -----

|                        |               |                          |               |     |
|------------------------|---------------|--------------------------|---------------|-----|
| TEST TYPE:             | M.F.E. CASING | DRILL PIPE LENGTH:       | 6441          | FT. |
| ELEVATION:             | 5408          | DRILL PIPE I.D.:         | 2.60          | IN. |
| TOTAL DEPTH:           | -             | FT. DRILL COLLAR LENGTH: | 702           | FT. |
| MAIN HOLE/CASING SIZE: | 7" X 29#      | FT. DRILL COLLAR I.D.:   | 1.78          | IN. |
| RAT HOLE/LINER SIZE:   | -             | IN. PACKER DEPTHS:       | 7174 & 7180   | FT. |
| FORMATION TESTED:      | ARAPIEN       | IN.                      | &             | FT. |
| NET PROD. INTERVAL:    | -             | FT. DEPTHS REF. TO:      | KELLY BUSHING | FT. |
| POROSITY:              | -             | %                        | &             | FT. |

----- TEST TOOL CHAMBER DATA -----

|                        |         |           |
|------------------------|---------|-----------|
| SAMPLER PRESSURE:      | 27      | PSIG      |
| RECOVERED OIL GRAVITY: | - API @ | - DEG. F. |
| RECOVERY GOR:          | -       | FT3/BBL.  |

----- MUD DATA -----

|             |         |         |       |
|-------------|---------|---------|-------|
| TYPE:       | KCL     |         |       |
| WEIGHT:     | 8.4     | LB/GAL. |       |
| VISCOSITY:  | -       | SEC.    |       |
| WATER LOSS: | -       | CC      |       |
| FLUID       | RESIST  | TEMP    | CHLOR |
| (OHM-M)     | (DEG F) | (PPM)   |       |

SAMPLE CHAMBER CONTENTS

| FLUID         | VOLUME  | MEAS. | RESIST. | TEMP.    | CHLOR. |
|---------------|---------|-------|---------|----------|--------|
|               |         |       | (OHM-M) | (DEG F.) | (PPM)  |
| GAS:          | - FT.3  |       |         |          |        |
| OIL:          | - CC    |       |         |          |        |
| WATER:        | 2050 CC | .26   | 72      | 15500    |        |
| MUD:          | - CC    |       | -       | -        |        |
| FILTRATE:     | -       | -     | -       | -        |        |
| TOTAL LIQUID: | 2050 CC |       |         |          |        |

----- REMARKS -----

----- SURFACE INFORMATION -----

| DESCRIPTION(RATE OF FLOW)  | TIME | PRESSURE<br>PSIG | SURFACE<br>CHOKE |
|----------------------------|------|------------------|------------------|
| OPENED TOOL                | 1032 | -                | 1/4              |
| BLOW, 1 1/2" IN WATER      |      |                  | "                |
| BLOW, 1" IN WATER          | 1048 | -                | "                |
| BLOW DIED                  | 1110 | -                | "                |
| CLOSED FOR INITIAL SHUT-IN | 1132 | -                | "                |
| FINISHED SHUT-IN           | 1232 | -                | "                |
| RE-OPENED TOOL             | 1234 | -                | "                |
| NO BLOW                    |      |                  | "                |
| PULLED PACKER LOOSE        | 1836 | -                | -                |

|                 |      |        |                        |
|-----------------|------|--------|------------------------|
| CUSHION TYPE: - | - FT | - PSIG | 15/16 IN. BOTTOM CHOKE |
|-----------------|------|--------|------------------------|

----- RECOVERY INFORMATION -----

| RECOVERY | FEET | BARRELS | %OIL | %WATER | %OTHERS | API<br>GRAV. | DEG. | RESIST | DEG. | CHL   | PPM |
|----------|------|---------|------|--------|---------|--------------|------|--------|------|-------|-----|
| WATER    | 55   | .18     |      | 100    |         |              |      | .26    | 68   | 15500 |     |

FIELD REPORT NO. 13825D

# PRESSURE LOG

FIELD REPORT NO. 13825D

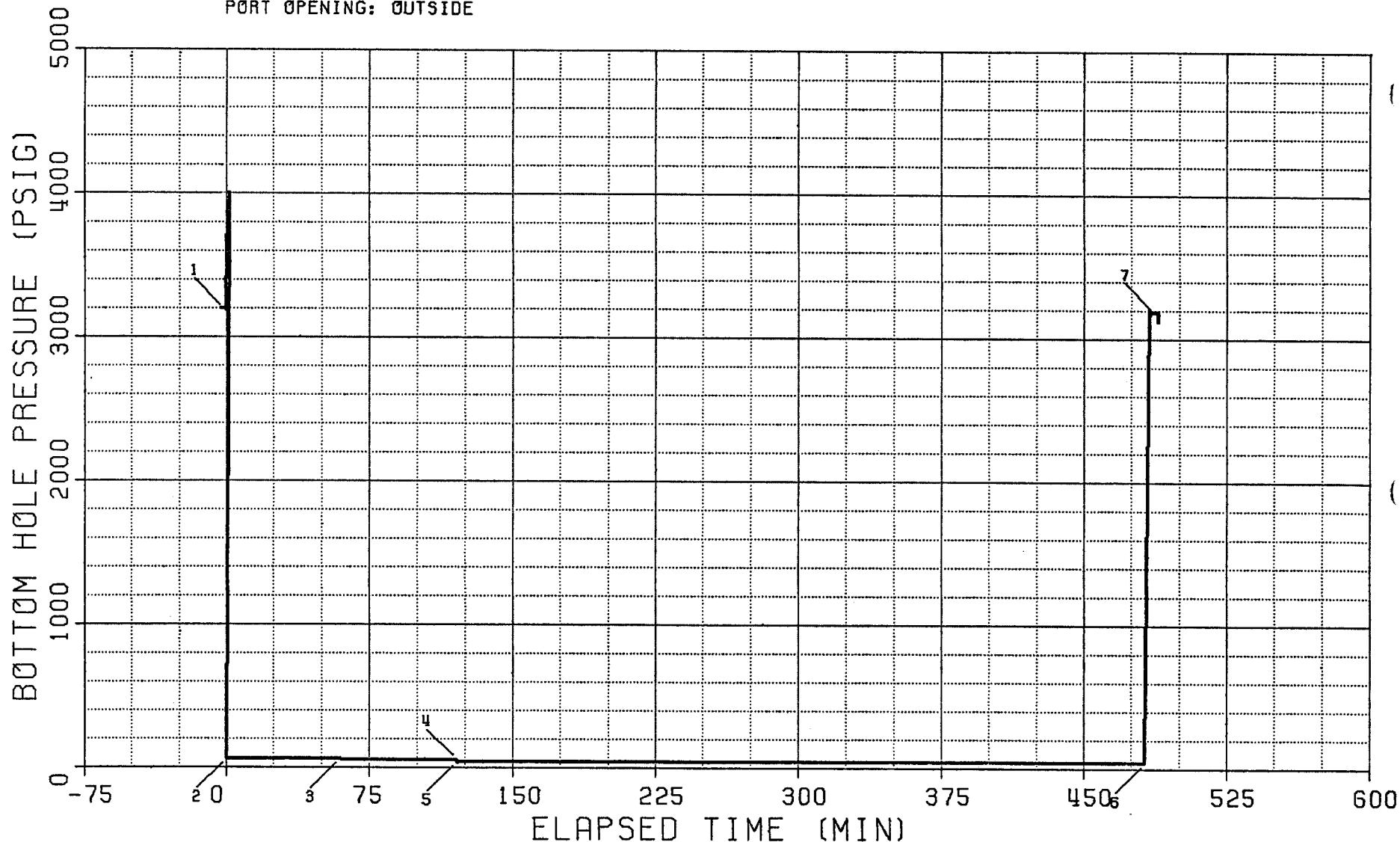
INSTRUMENT:

NUMBER: J-510

CAPACITY: 6400 PSI

DEPTH: 7190 FT

PORT OPENING: OUTSIDE



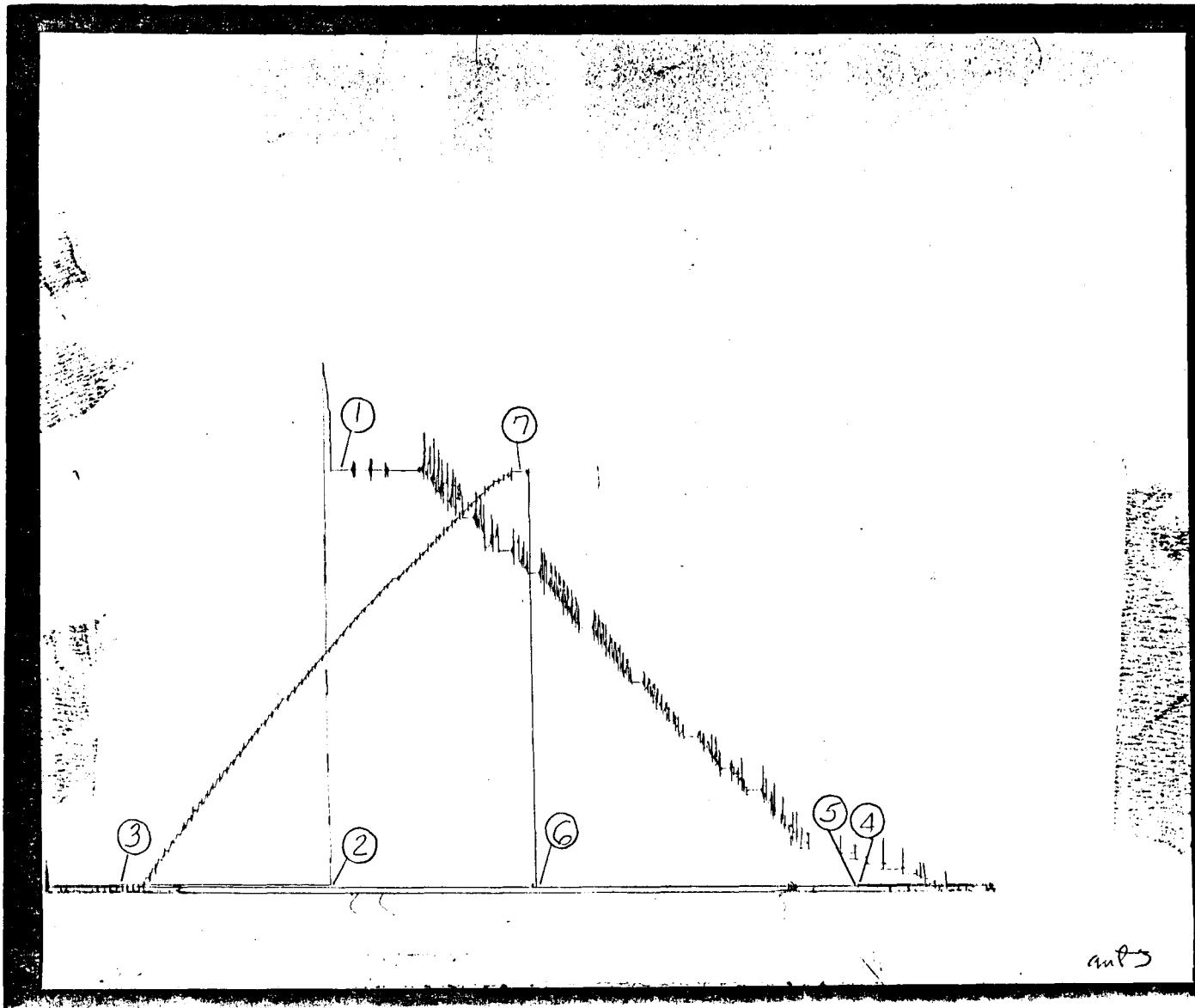
FIELD REPORT NO.: 13825 D

CAPACITY: 6400#

JOHNSTON  
Schlumberger

INSTRUMENT NO.: J-510

NUMBER OF REPORTS: 16-



## BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-510  
PORT OPENING: OUTSIDECAPACITY (PSI): 6400  
BOTTOM HOLE TEMP (F): 173DEPTH (FT): 7190  
PAGE 1

| EXPLANATION              | LABELED POINT | PRESSURE (PSIG) | ELAPSED TIME (MIN) |
|--------------------------|---------------|-----------------|--------------------|
| HYDROSTATIC MUD          | 1             | 3200            | -1.5               |
| START FLOW               | 2             | 61              | 0.0                |
| END FLOW & START SHUT-IN | 3             | 61              | 60.0               |
| END SHUT-IN              | 4             | 58              | 120.6              |
| START FLOW               | 5             | 43              | 120.8              |
| END FLOW                 | 6             | 42              | 482.1              |
| HYDROSTATIC MUD          | 7             | 3186            | 487.0              |

\*\*\*\*\*  
 \* SUMMARY OF FLOW PERIODS \*  
 \*\*\*\*\*

| FLOW PERIOD | ELAPSED TIME AT START (MIN) | ELAPSED TIME AT END (MIN) | DURATION OF FLOW (MIN) | PRESSURE AT START (PSIG) | PRESSURE AT END (PSIG) |
|-------------|-----------------------------|---------------------------|------------------------|--------------------------|------------------------|
| 1           | 0.0                         | 60.0                      | 60.0                   | 61                       | 61                     |
| 2           | 120.8                       | 482.1                     | 361.3                  | 43                       | 42                     |

\*\*\*\*\*  
 \* SUMMARY OF SHUT-IN PERIODS \*  
 \*\*\*\*\*

| SHUT-IN PERIOD | ELAPSED TIME AT START (MIN) | ELAPSED TIME AT END (MIN) | DURATION OF SHUT-IN (MIN) | PRESSURE AT START (PSIG) | PRESSURE AT END (PSIG) | FINAL FLOW PRESSURE (PSIG) | PRODUCING TIME (MIN) |
|----------------|-----------------------------|---------------------------|---------------------------|--------------------------|------------------------|----------------------------|----------------------|
| 1              | 60.0                        | 120.6                     | 60.6                      | 61                       | 58                     | 61                         | 60.0                 |

TEST PHASE : FLOW PERIOD # 1  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| 0.0                   | 0.0                 | 61                         |
| 30.0                  | 30.0                | 61                         |
| 60.0                  | 60.0                | 61                         |

TEST PHASE : SHUT-IN PERIOD # 1  
\*\*\*\*\*

1. FINAL FLOW PRESSURE ["P<sub>WF</sub>"] = 61 PSIG
2. PRODUCING TIME ["T<sub>P</sub>"] = 60.0 MIN

| ELAPSED TIME<br>(MIN) | DELTA TIME ["DT"]<br>(MIN) | SHUT-IN PRESSURE ["P <sub>WS</sub> "]<br>(PSIG) | LOG [(T + DT)/DT]<br>P | DELTA PRESSURE<br>[P <sub>WS</sub> - P <sub>WF</sub> ]<br>WF |
|-----------------------|----------------------------|---|------------------------|--|
| 60.0                  | 0.0                        | 61  |                        | 0  |
| 61.0                  | 1.0                        | 57  | 1.785                  | -5   |
| 62.0                  | 2.0                        | 57  | 1.491                  | -5   |
| 63.0                  | 3.0                        | 57  | 1.322                  | -4   |
| 64.0                  | 4.0                        | 57  | 1.204                  | -4   |
| 65.0                  | 5.0                        | 57  | 1.114                  | -4   |
| 66.0                  | 6.0                        | 57  | 1.041                  | -4   |
| 67.0                  | 7.0                        | 57  | 0.981                  | -4   |
| 68.0                  | 8.0                        | 57  | 0.929                  | -4   |
| 69.0                  | 9.0                        | 57  | 0.884                  | -4   |
| 70.0                  | 10.0                       | 57  | 0.845                  | -4   |
| 72.0                  | 12.0                       | 57  | 0.778                  | -4   |
| 74.0                  | 14.0                       | 57  | 0.723                  | -4   |
| 76.0                  | 16.0                       | 57  | 0.676                  | -4   |
| 78.0                  | 18.0                       | 57  | 0.637                  | -4   |
| 80.0                  | 20.0                       | 57  | 0.602                  | -4   |
| 82.0                  | 22.0                       | 58  | 0.571                  | -4   |
| 84.0                  | 24.0                       | 58  | 0.544                  | -3   |
| 86.0                  | 26.0                       | 58  | 0.519                  | -3   |
| 88.0                  | 28.0                       | 58  | 0.497                  | -3   |
| 90.0                  | 30.0                       | 58  | 0.477                  | -3   |
| 95.0                  | 35.0                       | 58  | 0.433                  | -3   |
| 100.0                 | 40.0                       | 58  | 0.398                  | -3   |
| 105.0                 | 45.0                       | 58  | 0.368                  | -3   |
| 110.0                 | 50.0                       | 58  | 0.342                  | -3   |
| 115.0                 | 55.0                       | 58  | 0.320                  | -3   |
| 120.0                 | 60.0                       | 58  | 0.301                  | -3   |
| 120.6                 | 60.6                       | 58  | 0.299                  | -3   |

TEST PHASE: FLOW PERIOD # 2  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| *****                 | *****               | *****                      |
| 120.8                 | 0.0                 | 43                         |
| 150.8                 | 30.0                | 43                         |
| 180.8                 | 60.0                | 43                         |
| 210.8                 | 90.0                | 43                         |
| 240.8                 | 120.0               | 43                         |
| 270.8                 | 150.0               | 43                         |
| 300.8                 | 180.0               | 43                         |
| 330.8                 | 210.0               | 43                         |
| 360.8                 | 240.0               | 45                         |
| 390.8                 | 270.0               | 44                         |
| 420.8                 | 300.0               | 43                         |
| 450.8                 | 330.0               | 43                         |
| 480.8                 | 360.0               | 42                         |
| 482.1                 | 361.3               | 42                         |

COMPANY FOREST OIL CORPORATION WELL SIGARD UNIT #1

TEST NO. 2

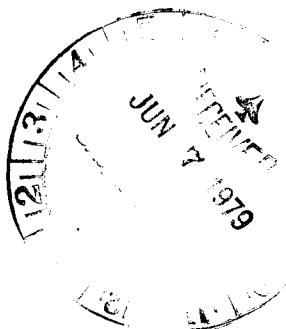
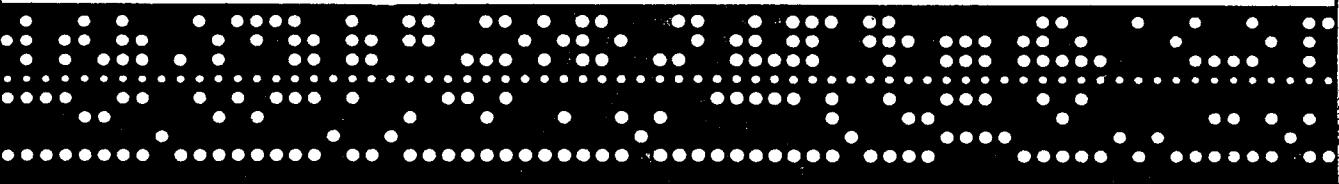
COUNTY SEVIER

STATE UTAH

JOHNSTON

Schlumberger

**computerized  
data  
analysis**



F.R. #13824 D

# Reservoir Engineering Data



**JOHNSTON**

Recorder No. J-510

Field Report No. 13824 D

|  |                    |  |  |         |                |
|--|--------------------|--|--|---------|----------------|
| Damage Ratio<br>DR                                 | 0.73               | Effective Transmissibility<br>TO WATER | $\frac{Kh}{\mu B}$                               | 13.70   | Md.-ft.<br>Cp. |
| Maximum Reservoir Pressure<br>INITIAL SHUT-IN      | $P_o$<br>3136      | P.S.I.G.                               | Effective Transmissibility<br>$\frac{Kh}{\mu B}$ | -       | Md.-ft.<br>Cp. |
| Slope of Shut-in Curve<br>FINAL SHUT-IN            | $M_1$<br>736       | PSI/log cycle                          | Flow Rate<br>WATER                               | Q<br>62 | Bbl./day       |
| Potentiometric Surface<br>(Datum Plane, Sea Level) | PS<br>5272 ft.     |  | Pressure Gradient                                |         | 0.424 PSI ft.  |
| Productivity Index<br>PI                           | 0.026 Bbl./day/PSI |  | Gas Oil Ratio<br>GOR                             | -       | CF/Bbl.        |
| Radius of Investigation                            | 60 ft.             | K (Effective to WATER)                 | )  | 0.46    | Md.            |

SLOPE  $M_1 = 3078 - 2342 = 736$

SLOPE  $M_2 = 3130 - 2271 = 859$   
Assumptions made for Calculations for Liquid Recoveries

1. Q is averaged at a constant rate.
2.  $P_f$  is formation flowing pressure at a constant rate.
3. Formation flow is taken as single phase flow.  
If gas is produced at surface, phase separation is assumed to have occurred in drill pipe.
4. Radial flow is assumed.
5. For the purpose of calculating EDR where specific reservoir parameters are not available it is assumed that:

|  |                                      |
|--|--------------------------------------|
| Effective permeability, K, will fall between .....   | 1 to 200 md                          |
| Formation porosity, $\phi$ , will fall between ..... | 0.1 to 0.3                           |
| Fluid compressibility, $c$ , will fall between ..... | $10^{-6}$ to $10^{-4}$               |
| Fluid viscosity, $\mu$ , will fall between .....     | 0.05 to 50 cp.                       |
| Well bore radius, $r_w$ , will fall between.....     | $3\frac{7}{8}$ " to $4\frac{1}{2}$ " |

Which gives an average value for the function  $\log \frac{K}{\phi \mu c r_w^2}$  of ..... 5.5

6. Other standard radial flow, equilibrium assumptions.

## Empirical Equations:

1.  $EDR = \frac{P_o - P_f}{M(\log T + 2.65)}$  where  $M = \frac{P_1 - P_{10}}{\text{Log Cycle}}$
2. Transmissibility  $\frac{Kh}{\mu B} = \frac{162.6 Q}{M}$
3. DST J =  $\frac{Q}{P_o - P_f}$       Theoretical J =  $\frac{7.08 \times 10^{-3} Kh}{\mu B \ln(r_e/r_w)}$       Assumed  $\ln(r_e/r_w) = 7.60$
4. P.S. =  $[P_o \times 2.309 \text{ ft./PSI}] - [\text{Recorder depth to sea level.}]$
5. Radius of investigation,  $r_i = \sqrt{\frac{Kt}{40\phi\mu c}}$  where t = time in days

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.

JOHNSTON

Schlumberger

## COMPUTERIZED DATA ANALYSIS

JUNE 6, 1979

GENTLEMEN:

THE ENCLOSED TEST APPEARS TO BE A GOOD MECHANICAL DRILL STEM TEST DURING WHICH THE TOOLS DID FUNCTION PROPERLY. THE FORMATION PRODUCED ENOUGH RESERVOIR FLUID FOR PROPER IDENTIFICATION. RESERVOIR PRESSURE DRAWDOWN WAS SUFFICIENT AND APPROPRIATE SHUT-IN BUILD-UPS DID OCCUR FOR RELIABLE QUANTITATIVE ANALYSIS. RESERVOIR PARAMETERS WERE CALCULATED BY THE HORNER METHOD.

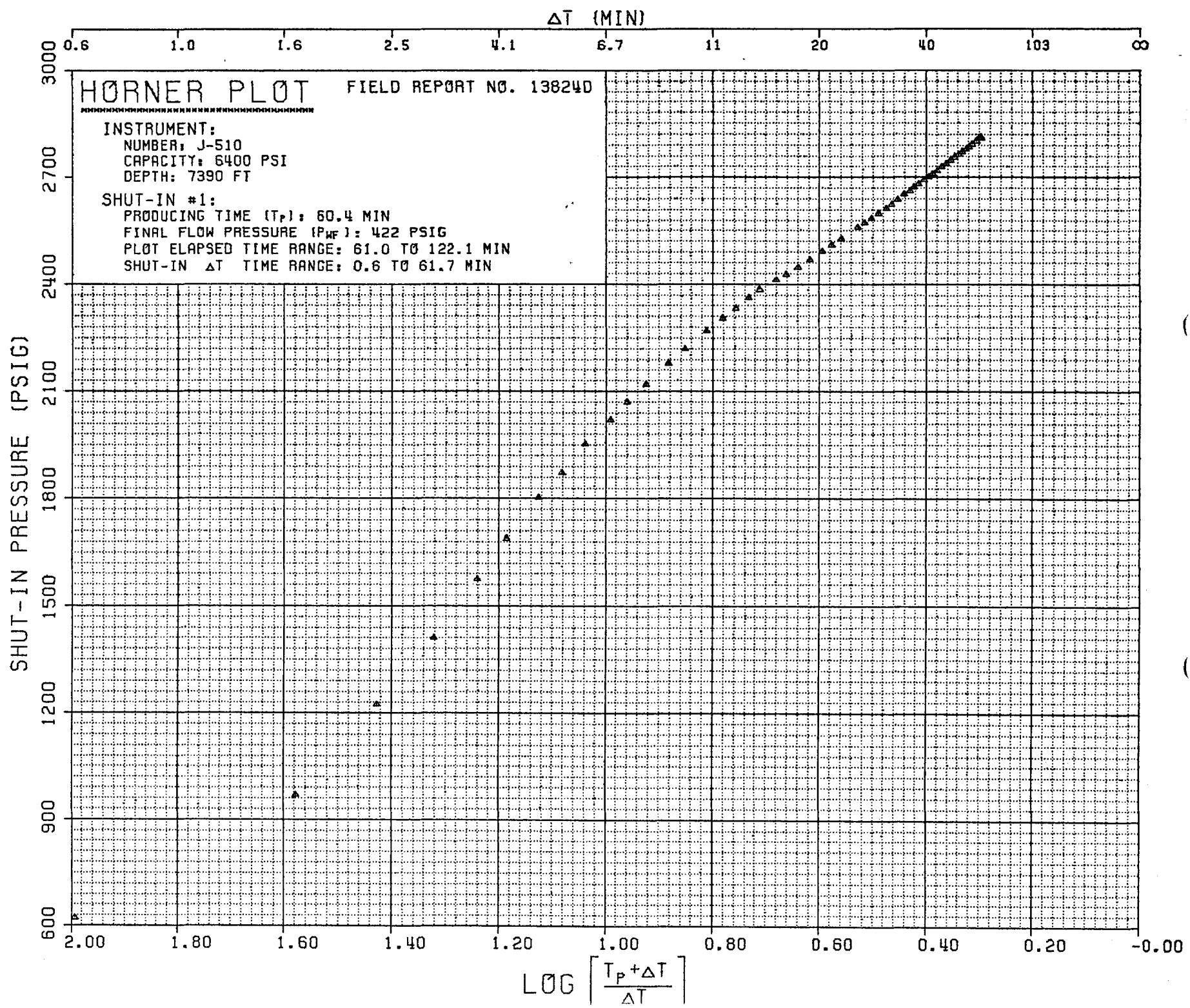
1. FLOW RATE: A TOTAL LIQUID RATE OF 62 BBLS/DAY WAS NOTED DURING THIS TEST.
2. RESERVOIR PRESSURE: EXTRAPOLATION OF THE INITIAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3136 P.S.I.G. AT RECORDER DEPTH. EXTRAPOLATION OF THE FINAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3130 P.S.I.G. AT RECORDER DEPTH. THE DIFFERENCE BETWEEN THE INITIAL AND FINAL SHUT-IN PRESSURE OF 6 P.S.I.G. IS INSIGNIFICANT.
3. PERMEABILITY: THE CALCULATED TRANSMISSIBILITY FACTOR OF 13.7 MD.-FT./CP. INDICATES AN AVERAGE EFFECTIVE PERMEABILITY TO WATER OF 0.46 MD. FOR THE REPORTED 30 FOOT TEST INTERVAL. THE CALCULATIONS WERE BASED ON A SLOPE OF 736 P.S.I./LOG CYCLE OBTAINED FROM THE FINAL SHUT-IN BUILD-UP PLOT. IT WAS ASSUMED FOR THESE CALCULATIONS THE PRODUCT OF THE WATER'S VISCOSITY AND FORMATION VOLUME FACTOR TO BE 1.0.
4. WELL BORE DAMAGE: THE CALCULATED DAMAGE RATIO OF 0.73 INDICATES THAT A STIMULATED WELL BORE IS PRESENT AT THE TIME AND CONDITIONS OF THIS TEST.
5. RADIUS OF INVESTIGATION: THE CALCULATED RADIUS OF INVESTIGATION OF THIS TEST IS 60 FEET BASED ON AN ASSUMED POROSITY OF 10%, COMPRESSIBILITY OF  $4.0 \times 10^{-6}$ , AND OTHER ASSUMPTIONS MADE IN NUMBER 3 ABOVE.
6. GENERAL COMMENTS: THE FORMATION EXHIBITS THE CHARACTERISTICS OF RELATIVELY LOW PERMEABILITY EFFECTIVE TO THE RESERVOIR FLUID AND INDICATES THE ABSENCE OF WELL BORE DAMAGE. AN ANOMALY WAS NOTED TOWARD THE END OF THE SHUT-IN BUILD-UP PLOT. THIS ANOMALY INDICATED A DECREASE IN TRANSMISSIBILITY AWAY FROM THE WELL BORE.

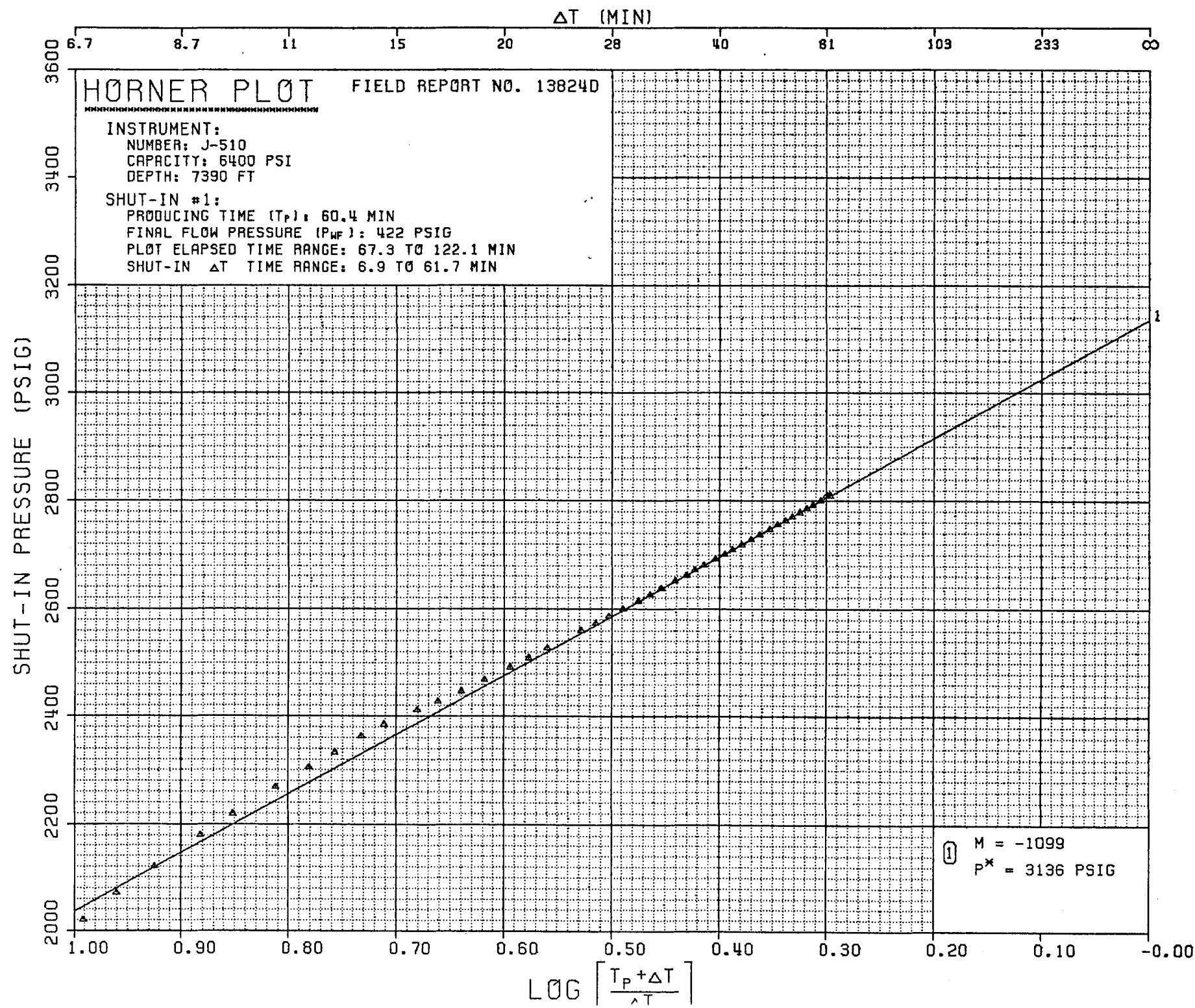
*Dennis Myren*  
DENNIS MYREN  
RESERVOIR EVALUATION  
DEPARTMENT

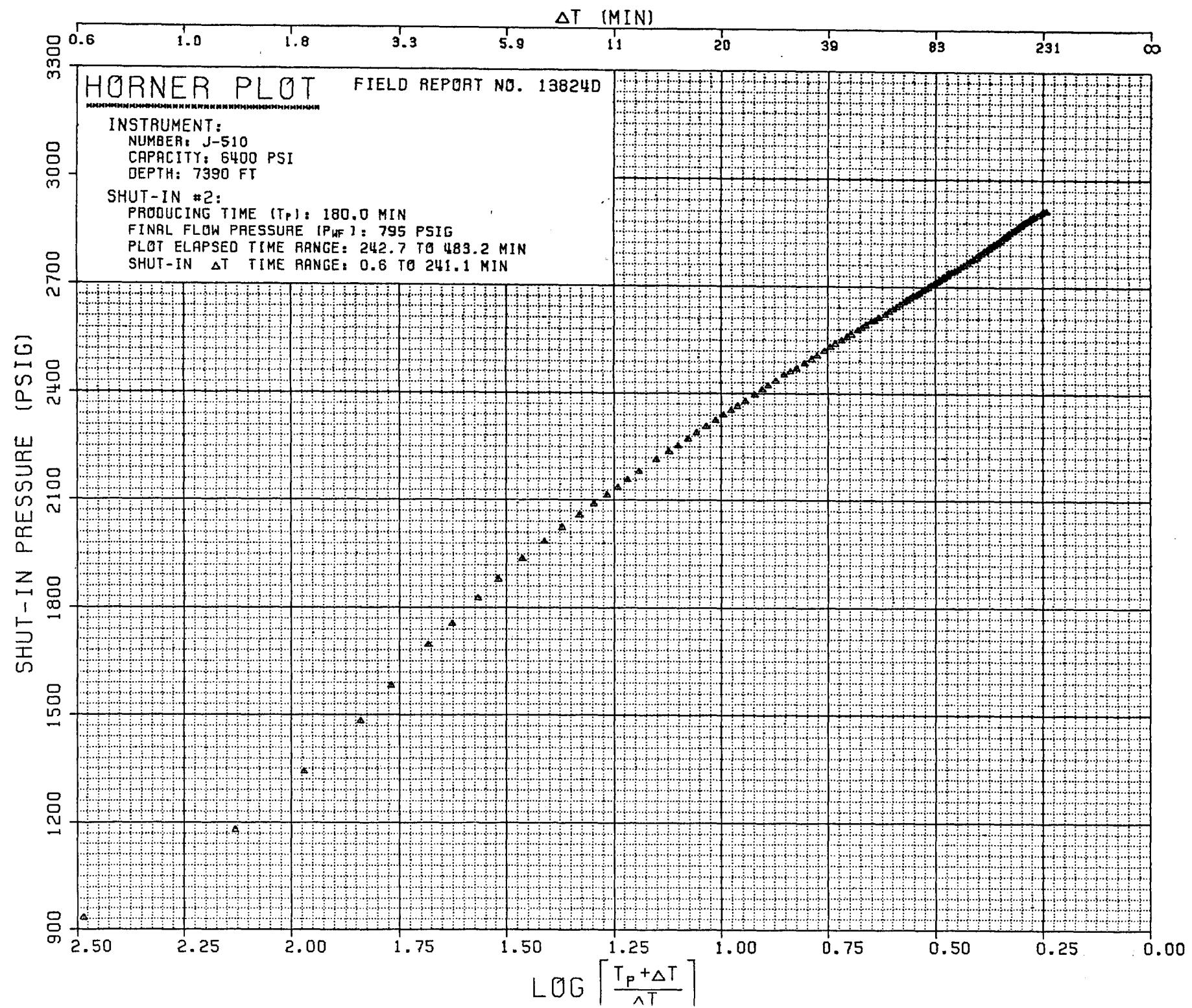
FOREST OIL CORPORATION  
SIGARD UNIT #1; SEVIER COUNTY, UTAH  
TEST #2; 7390' TO 7420'  
LOCATION: SEC. 14 - T22S - R1W

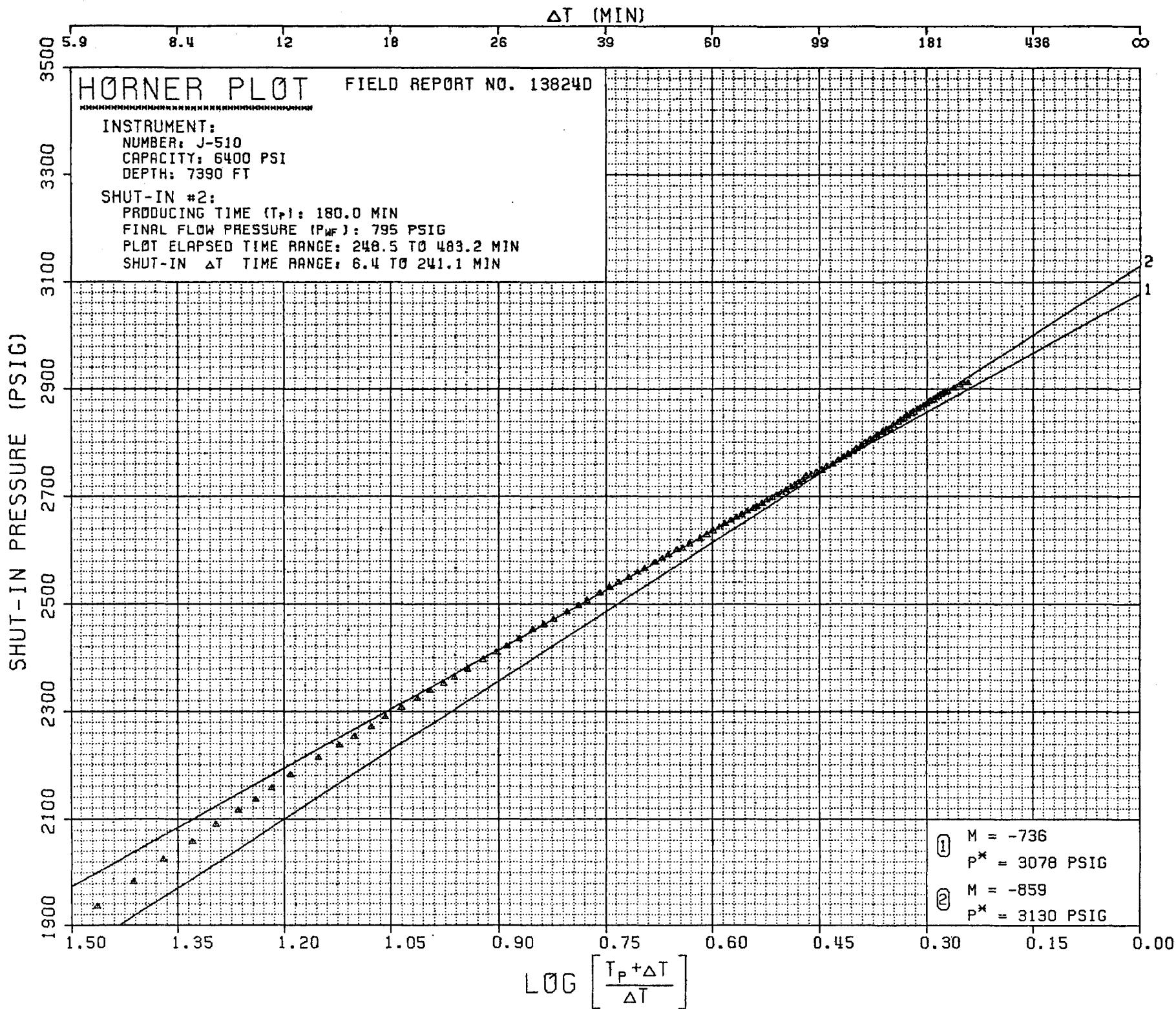
F.R. #13824 D

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.









FIELD REPORT NO. 13824D

INSTRUMENT:

NUMBER: J-510

CAPACITY: 6400 PSI

DEPTH: 7390 FT

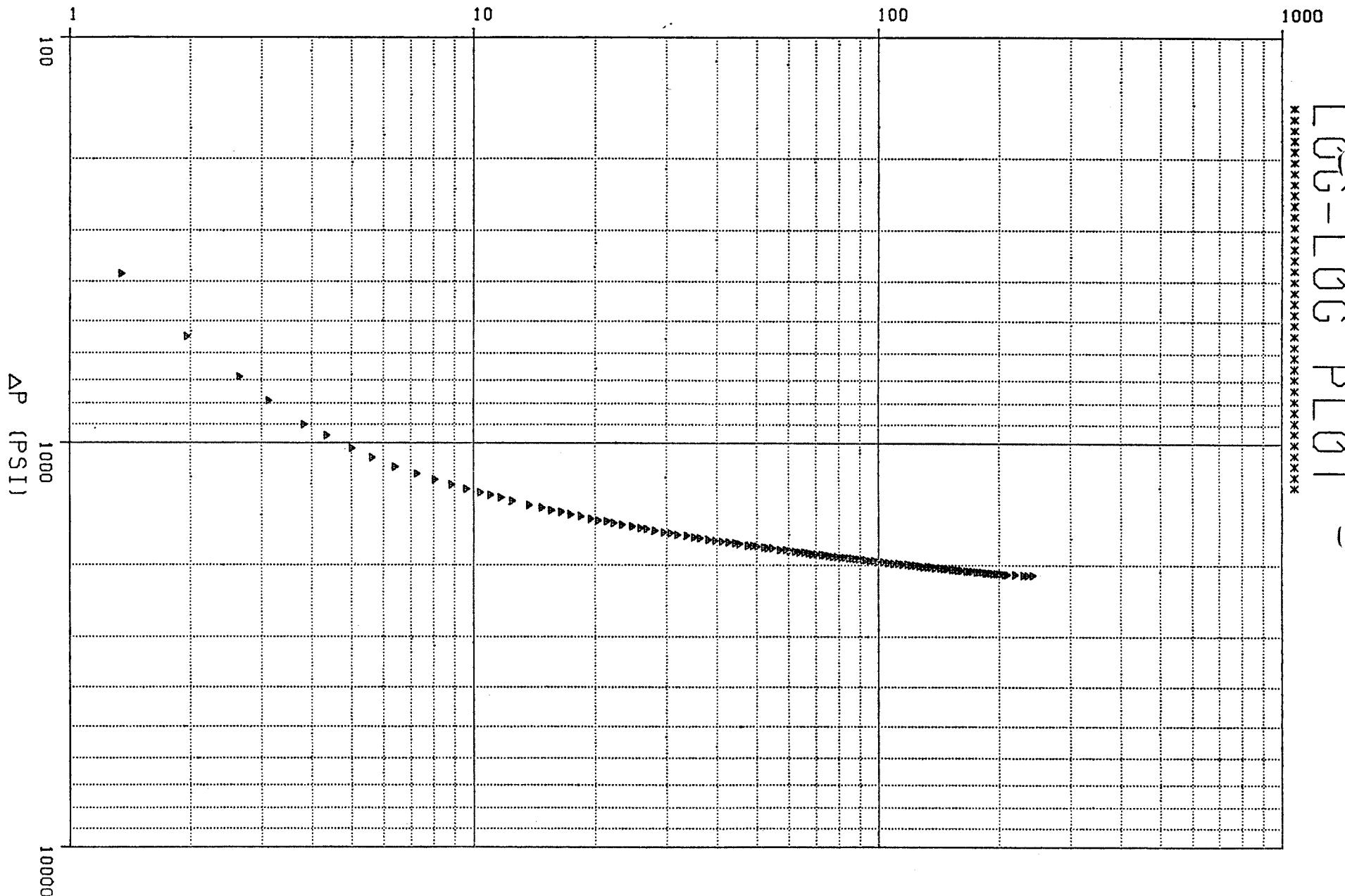
SHUT-IN #2:

FINAL FLOW PRESSURE ( $P_{WF}$ ): 795 PSIG

PLOT ELAPSED TIME RANGE: 243.5 TO 483.2 MIN

SHUT-IN AT TIME RANGE: 1.3 TO 241.1 MIN

$\Delta T$  (MIN)



WELL IDENTIFICATION

COMPANY: FOREST OIL CORPORATION  
P.O. BOX 1310  
CASPER, WYOMING 82602  
WELL: SIGARD UNIT #1  
TEST INTERVAL: 7390' TO 7420'  
TEST NO: 2  
COUNTY: SEVIER  
TECHNICIAN: RICHARDS (VERNAL)

CUSTOMER: SAME

LOCATION: SEC. 14-T22S-R1W  
FIELD: WILD CAT  
TEST DATE: 5-26-79  
STATE: UTAH  
TEST APPROVED BY: -

EQUIPMENT AND HOLE DATA

|                        |               |                      |               |     |
|------------------------|---------------|----------------------|---------------|-----|
| TEST TYPE:             | M.F.E. CASING | DRILL PIPE LENGTH:   | 6642          | FT. |
| ELEVATION:             | 5408 GR.      | DRILL PIPE I.D.:     | 2.60          | IN. |
| TOTAL DEPTH:           | -             | DRILL COLLAR LENGTH: | 702           | FT. |
| MAIN HOLE/CASING SIZE: | 7" X 29#      | DRILL COLLAR I.D.:   | 1.78          | IN. |
| RAT HOLE/LINER SIZE:   | -             | PACKER DEPTHS:       | 7374 & 7380   | FT. |
| FORMATION TESTED:      | ARAPIEN       | IN.                  | &             | FT. |
| NET PROD. INTERVAL:    | -             | FT.                  | &             | FT. |
| POROSITY:              | 10            | DEPTH REF. TO:       | KELLY BUSHING | %   |

TEST TOOL CHAMBER DATA

SAMPLER PRESSURE: 10 PSIG  
RECOVERED OIL GRAVITY: - API @ - DEG. F.  
RECOVERY GOR: - FT3/BBL.

MUD DATA

TYPE: KCL  
WEIGHT: - LB/GAL.  
VISCOSITY: - SEC.  
WATER LOSS: - CC

SAMPLE CHAMBER CONTENTS

| FLUID         | VOLUME  | MEAS. | RESIST. | TEMP.    | CHLOR. |
|---------------|---------|-------|---------|----------|--------|
| GAS:          | - FT.3  | -     | (OHM-M) | (DEG F.) | (PPM)  |
| OIL:          | - CC    | -     | -       | -        | -      |
| WATER:        | 2050 CC | .06   | 92      | 216000   | -      |
| MUD:          | - CC    | -     | -       | -        | -      |
| FILTRATE:     | -       | -     | -       | -        | -      |
| TOTAL LIQUID: | 2050 CC | -     | -       | -        | -      |

| FLUID     | RESIST. (OHM-M) | TEMP (DEG F) | CHLOR (PPM) |
|-----------|-----------------|--------------|-------------|
| MUD:      | .04             | 80           | -           |
| FILTRATE: | -               | -            | 226000      |

REMARKS

## **SURFACE INFORMATION**

| DESCRIPTION(RATE OF FLOW)  | TIME | PRESSURE PSIG | SURFACE CHOKE |
|----------------------------|------|---------------|---------------|
| OPENED TOOL                |      | -             | 1/4           |
| BLOW, 4 1/2" IN WATER      | 0424 | -             | "             |
| BLOW, 6 1/4" IN WATER      | 0434 | -             | "             |
| BLOW, 1 3/4" IN WATER      | 0524 | -             | "             |
| CLOSED FOR INITIAL SHUT-IN | 0524 | -             | "             |
| FINISHED SHUT-IN           | 0624 | -             | "             |
| RE-OPENED TOOL             | 0626 | -             | "             |
| BLOW, 1/2" IN WATER        |      | -             | "             |
| BLOW, 1 3/4" IN WATER      | 0636 | -             | "             |
| BLOW, 3/4" IN WATER        | 0656 | -             | "             |
| SLIGHT BUBBLES ONLY        | 0746 | -             | "             |
| CLOSED FOR FINAL SHUT-IN   | 0826 | -             | "             |
| FINISHED SHUT-IN           | 1226 | -             | "             |
| PULLED PACKER LOOSE        | 1228 | -             | -             |

CUSHION TYPE: - - FT - PSIG 1 15/16 IN. BOTTOM CHOCK

## **RECOVERY INFORMATION**

| RECOVERY      | FEET | BARRELS | %OIL | %WATER | %OTHERS | API<br>GRAV. | DEG. | RESIST | DEG. | CHL<br>PPM |
|---------------|------|---------|------|--------|---------|--------------|------|--------|------|------------|
| GAS CUT WATER | 300  | 1.98    |      |        |         |              |      | .3     | 102  | 135000     |
| GAS CUT WATER | 300  | 1.98    |      |        |         |              |      | .05    | 88   | 18700      |
| GAS CUT WATER | 300  | 1.74    |      |        |         |              |      | .04    | 90   | 227000     |
| GAS CUT WATER | 631  | 2.02    |      |        |         |              |      | .04    | 94   | 216000     |

FIELD REPORT NO. 13824D

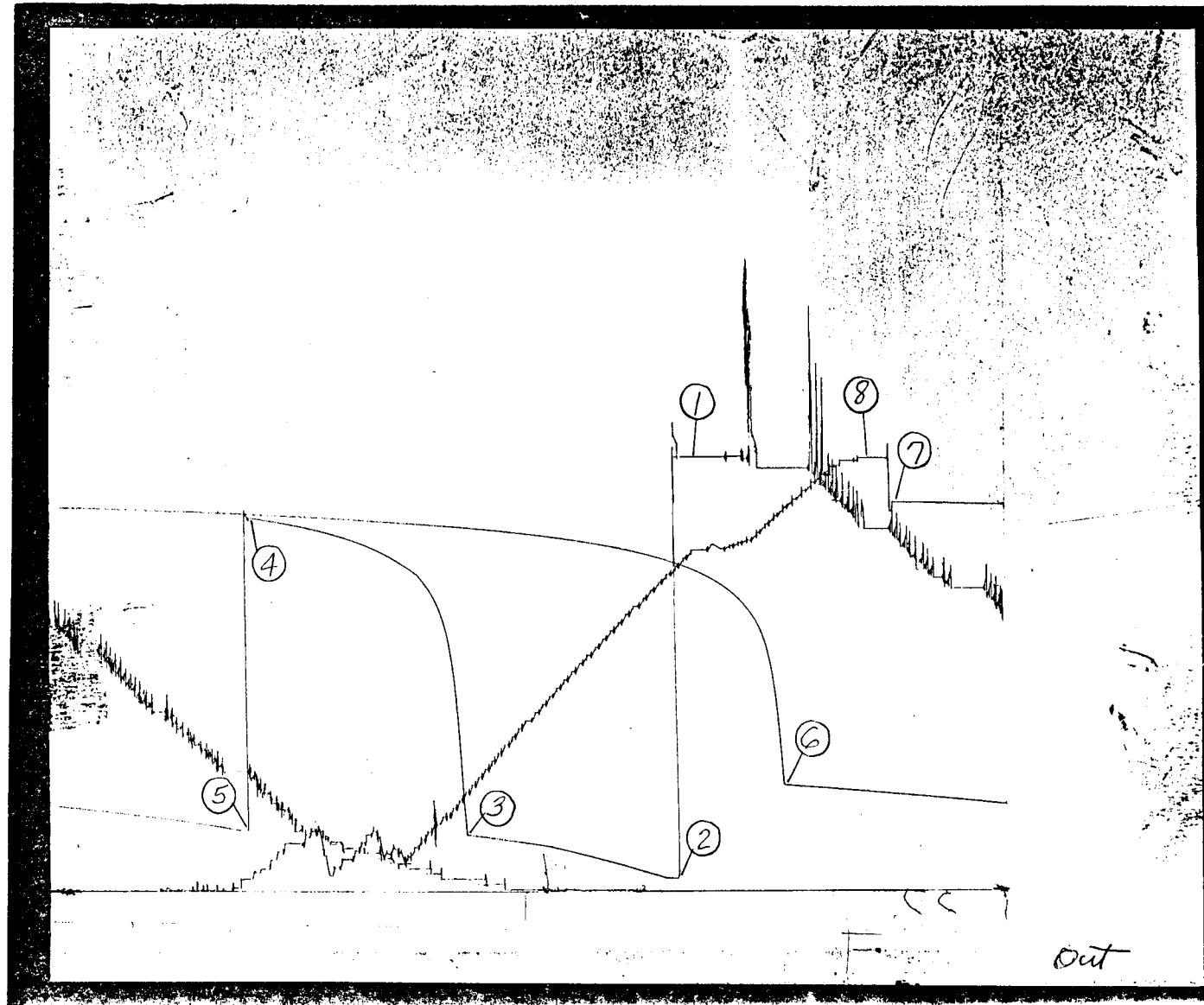
FIELD REPORT NO.: 13824 D

CAPACITY: 6400#

JOHNSTON  
Schlumberger

INSTRUMENT NO.: J-510

NUMBER OF REPORTS: 16-



# PRESSURE LOG

FIELD REPORT NO. 13824D

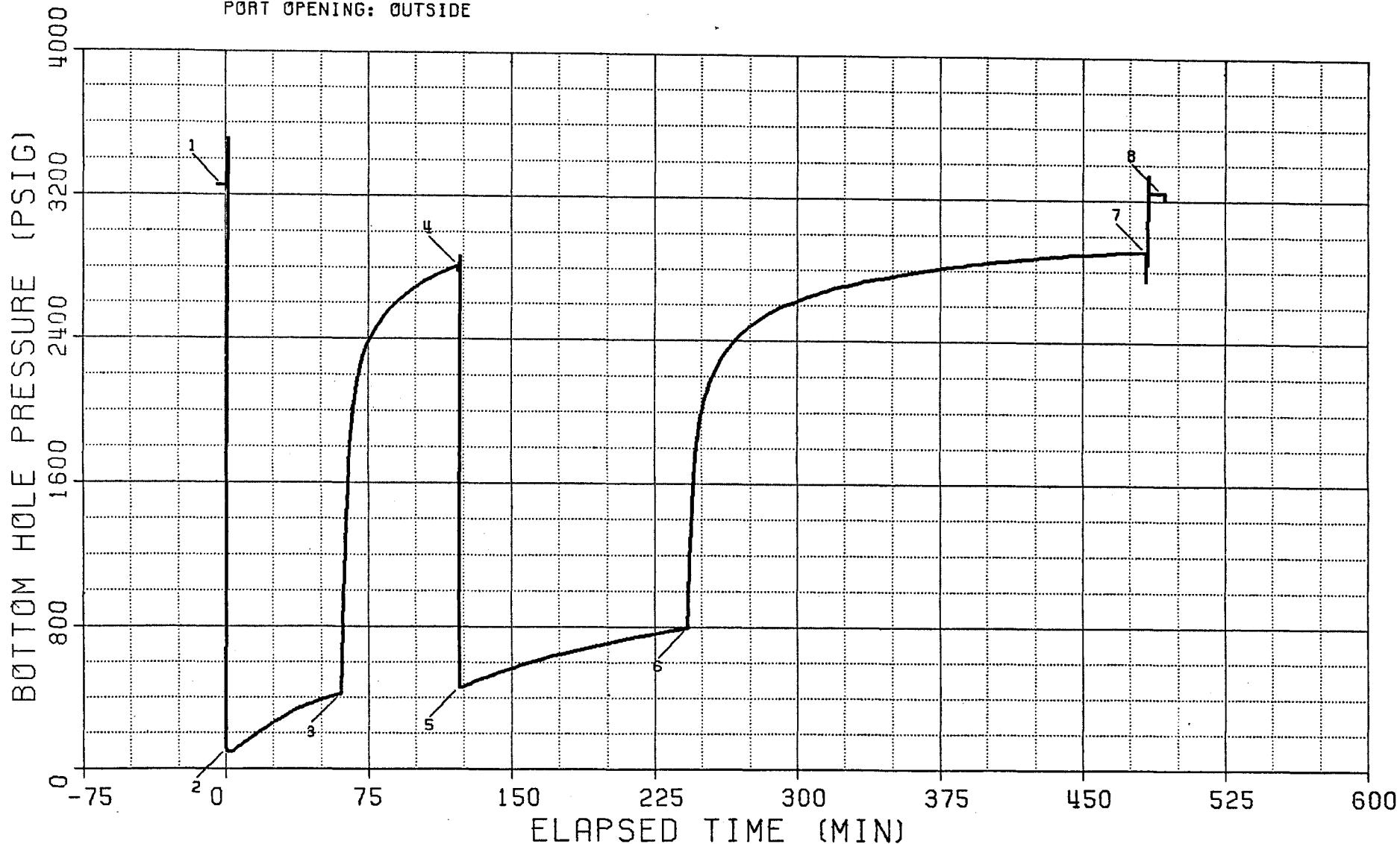
INSTRUMENT:

NUMBER: J-510

CAPACITY: 6400 PSI

DEPTH: 7390 FT

PORT OPENING: OUTSIDE



## BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-510  
PORT OPENING: OUTSIDECAPACITY (PSI): 6400  
BOTTOM HOLE TEMP (F): 180DEPTH (FT): 7390  
PAGE 1

| EXPLANATION              | LABELED POINT | PRESSURE (PSIG) | ELAPSED TIME (MIN) |
|--------------------------|---------------|-----------------|--------------------|
| HYDROSTATIC MUD          | 1             | 3254            | -2.0               |
| START FLOW               | 2             | 113             | 0.0                |
| END FLOW & START SHUT-IN | 3             | 422             | 60.4               |
| END SHUT-IN              | 4             | 2810            | 122.1              |
| START FLOW               | 5             | 461             | 122.6              |
| END FLOW & START SHUT-IN | 6             | 795             | 242.1              |
| END SHUT-IN              | 7             | 2912            | 483.2              |
| HYDROSTATIC MUD          | 8             | 3245            | 491.3              |

\*\*\*\*\*  
\* SUMMARY OF FLOW PERIODS \*  
\*\*\*\*\*

| FLOW PERIOD | ELAPSED TIME AT START (MIN) | ELAPSED TIME AT END (MIN) | DURATION OF FLOW (MIN) | PRESSURE AT START (PSIG) | PRESSURE AT END (PSIG) |
|-------------|-----------------------------|---------------------------|------------------------|--------------------------|------------------------|
| 1           | 0.0                         | 60.4                      | 60.4                   | 113                      | 422                    |
| 2           | 122.6                       | 242.1                     | 119.6                  | 461                      | 795                    |

\*\*\*\*\*  
\* SUMMARY OF SHUT-IN PERIODS \*  
\*\*\*\*\*

| SHUT-IN PERIOD | ELAPSED TIME AT START (MIN) | ELAPSED TIME AT END (MIN) | DURATION OF SHUT-IN (MIN) | PRESSURE AT START (PSIG) | PRESSURE AT END (PSIG) | FINAL FLOW PRESSURE (PSIG) | PRODUCING TIME (MIN) |
|----------------|-----------------------------|---------------------------|---------------------------|--------------------------|------------------------|----------------------------|----------------------|
| 1              | 60.4                        | 122.1                     | 61.7                      | 422                      | 2810                   | 422                        | 60.4                 |
| 2              | 242.1                       | 483.2                     | 241.1                     | 795                      | 2912                   | 795                        | 180.0                |

TEST PHASE : FLOW PERIOD # 1  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| *****                 | *****               | *****                      |
| 0.0                   | 0.0                 | 113                        |
| 10.0                  | 10.0                | 149                        |
| 20.0                  | 20.0                | 222                        |
| 30.0                  | 30.0                | 291                        |
| 40.0                  | 40.0                | 348                        |
| 50.0                  | 50.0                | 387                        |
| 60.0                  | 60.0                | 421                        |
| 60.4                  | 60.4                | 422                        |

TEST PHASE : SHUT-IN PERIOD # 1  
\*\*\*\*\*

1. FINAL FLOW PRESSURE ["P<sub>WF</sub>"] = 422 PSIG
2. PRODUCING TIME ["T<sub>P</sub>"] = 60.4 MIN

| ELAPSED TIME<br>(MIN) | DELTA TIME ["DT"]<br>(MIN) | SHUT-IN PRESSURE ["P <sub>WS</sub> "]<br>(PSIG) | LOG [(T + DT)/DT]<br>P | DELTA PRESSURE<br>[P <sub>WS</sub> - P <sub>WF</sub> ] |
|-----------------------|----------------------------|---|------------------------|--|
| *****                 | *****                      | *****   | *****                  | *****  |
| 60.4                  | 0.0                        | 422   |                        | 0  |
| 65.4                  | 5.0                        | 1815  | 1.117                  | 1393   |
| 70.4                  | 10.0                       | 2224  | 0.848                  | 1802   |
| 75.4                  | 15.0                       | 2394  | 0.701                  | 1972   |
| 80.4                  | 20.0                       | 2482  | 0.604                  | 2060   |
| 85.4                  | 25.0                       | 2554  | 0.534                  | 2133   |
| 90.4                  | 30.0                       | 2610  | 0.479                  | 2188   |
| 95.4                  | 35.0                       | 2658  | 0.435                  | 2236   |
| 100.4                 | 40.0                       | 2696  | 0.400                  | 2275   |
| 105.4                 | 45.0                       | 2729  | 0.370                  | 2308   |
| 110.4                 | 50.0                       | 2758  | 0.344                  | 2336   |
| 115.4                 | 55.0                       | 2782  | 0.322                  | 2360   |
| 120.4                 | 60.0                       | 2806  | 0.302                  | 2384   |
| 122.1                 | 61.7                       | 2810  | 0.297                  | 2388   |

TEST PHASE : FLOW PERIOD # 2  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| *****                 | *****               | *****                      |
| 122.6                 | 0.0                 | 461                        |
| 132.6                 | 10.0                | 501                        |
| 142.6                 | 20.0                | 540                        |
| 152.6                 | 30.0                | 576                        |

TEST PHASE : FLOW PERIOD # 2  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| *****                 | *****               | *****                      |
| 162.6                 | 40.0                | 610                        |
| 172.6                 | 50.0                | 639                        |
| 182.6                 | 60.0                | 665                        |
| 192.6                 | 70.0                | 691                        |
| 202.6                 | 80.0                | 715                        |
| 212.6                 | 90.0                | 737                        |
| 222.6                 | 100.0               | 757                        |
| 232.6                 | 110.0               | 778                        |
| 242.1                 | 119.6               | 795                        |

TEST PHASE : SHUT-IN PERIOD # 2  
\*\*\*\*\*

1. FINAL FLOW PRESSURE ["P<sub>WF</sub>"] = 795 PSIG
2. PRODUCING TIME ["T<sub>P</sub>"] = 180.0 MIN

| ELAPSED TIME<br>(MIN) | DELTA TIME ["DT"]<br>(MIN) | SHUT-IN PRESSURE ["P <sub>WS</sub> "]<br>(PSIG) | LOG [(T + DT)/DT]<br>P | DELTA PRESSURE<br>[P <sub>WS</sub> - P <sub>WF</sub> ]<br>WS WF |
|-----------------------|----------------------------|---|------------------------|---|
| *****                 | *****                      | *****   | *****                  | *****   |
| 242.1                 | 0.0                        | 795   |                        | 0   |
| 243.1                 | 1.0                        | 1068  | 2.258                  | 273   |
| 244.1                 | 2.0                        | 1353  | 1.959                  | 558   |
| 245.1                 | 3.0                        | 1559  | 1.785                  | 763   |
| 246.1                 | 4.0                        | 1716  | 1.663                  | 921   |
| 247.1                 | 5.0                        | 1824  | 1.568                  | 1029  |
| 248.1                 | 6.0                        | 1907  | 1.491                  | 1112  |
| 249.1                 | 7.0                        | 1969  | 1.427                  | 1174  |
| 250.1                 | 8.0                        | 2023  | 1.371                  | 1228  |
| 251.1                 | 9.0                        | 2065  | 1.322                  | 1270  |
| 252.1                 | 10.0                       | 2104  | 1.279                  | 1309  |
| 254.1                 | 12.0                       | 2170  | 1.204                  | 1375  |
| 256.1                 | 14.0                       | 2221  | 1.142                  | 1426  |
| 258.1                 | 16.0                       | 2264  | 1.088                  | 1468  |
| 260.1                 | 18.0                       | 2303  | 1.041                  | 1507  |
| 262.1                 | 20.0                       | 2335  | 1.000                  | 1540  |
| 264.1                 | 22.0                       | 2364  | 0.963                  | 1569  |
| 266.1                 | 24.0                       | 2390  | 0.929                  | 1595  |
| 268.1                 | 26.0                       | 2414  | 0.899                  | 1619  |
| 270.1                 | 28.0                       | 2436  | 0.871                  | 1640  |
| 272.1                 | 30.0                       | 2457  | 0.845                  | 1661  |
| 277.1                 | 35.0                       | 2497  | 0.788                  | 1701  |
| 282.1                 | 40.0                       | 2534  | 0.740                  | 1739  |
| 282.1                 | 60.0                       | 2634  | 0.602                  | 1839  |
| 282.1                 | 30.0                       | 2702  | 0.512                  | 1907  |

FIELD REPORT NO. 13824D  
INSTRUMENT NO. J-510

## TEST PHASE : SHUT-IN PERIOD # 2

\*\*\*\*\*

1. FINAL FLOW PRESSURE ["P<sub>WF</sub>"] = 795 PSIG2. PRODUCING TIME ["T<sub>P</sub>"] = 180.0 MIN

| ELAPSED TIME<br>(MIN) | DELTA TIME ["DT"]<br>(MIN) | SHUT-IN PRESSURE ["P <sub>WS</sub> "]<br>(PSIG) | LOG [(T + DT)/DT]<br>P | DELTA PRESSURE<br>[P <sub>WS</sub> - P <sub>WF</sub> ] |
|-----------------------|----------------------------|---|------------------------|--|
| 342.1                 | 100.0                      | 2750  | 0.447                  | 1954   |
| 362.1                 | 120.0                      | 2789  | 0.398                  | 1994   |
| 382.1                 | 140.0                      | 2822  | 0.359                  | 2027   |
| 402.1                 | 160.0                      | 2850  | 0.327                  | 2055   |
| 422.1                 | 180.0                      | 2872  | 0.301                  | 2076   |
| 442.1                 | 200.0                      | 2891  | 0.279                  | 2096   |
| 462.1                 | 220.0                      | 2902  | 0.260                  | 2107   |
| 482.1                 | 240.0                      | 2912  | 0.243                  | 2117   |
| 483.2                 | 241.1                      | 2912  | 0.242                  | 2117   |

**COMPANY** FOREST OIL CORPORATION    **WELL** SIGARD UNIT #1    **TEST NO.** 1    **COUNTY** SEVIER    **STATE** UTAH

**CONFIDENTIAL**

**JOHNSTON**

**Schlumberger**

**technical  
report**

WELL IDENTIFICATION

|                |  |                                |
|----------------|--|--------------------------------|
| COMPANY:       | FOREST OIL CORPORATION<br>P.O. BOX 1310<br>CASPER, WYOMING 82602 | CUSTOMER: SAME                 |
| WELL:          | SIGARD UNIT #1   | LOCATION: SEC. 14 - T22S - R1W |
| TEST INTERVAL: | 8370' TO 8400'   | FIELD: WILD CAT                |
| TEST NO:       | 1  | TEST DATE: 5-21-79             |
| COUNTY:        | SEVIER   | STATE: UTAH                    |
| TECHNICIAN:    | RICHARDS (VERNAL)  | TEST APPROVED BY: -            |

EQUIPMENT AND HOLE DATA

|                        |               |                          |               |     |
|------------------------|---------------|--------------------------|---------------|-----|
| TEST TYPE:             | M.F.E. CASING | DRILL PIPE LENGTH:       | 7578          | FT. |
| ELEVATION:             | 5408 G.R.     | DRILL PIPE I.D.:         | 2.6           | IN. |
| TOTAL DEPTH:           | -             | FT. DRILL COLLAR LENGTH: | 702           | FT. |
| MAIN HOLE/CASING SIZE: | 7" X 29#      | FT. DRILL COLLAR I.D.:   | 1.78          | IN. |
| RAT HOLE/LINER SIZE:   | -             | IN. PACKER DEPTHS:       | 8310 & 8316   | FT. |
| FORMATION TESTED:      | ARAPIEN       | IN.                      | &             | FT. |
| NET PROD. INTERVAL:    | 30            | FT. DEPTHS REF. TO:      | KELLY BUSHING | FT. |
| POROSITY:              | -             | %                        | &             | FT. |

TEST TOOL CHAMBER DATA

|                        |         |           |
|------------------------|---------|-----------|
| SAMPLER PRESSURE:      | Ø       | PSIG      |
| RECOVERED OIL GRAVITY: | - API @ | - DEG. F. |
| RECOVERY GOR:          | -       | FT3/BBL.  |

SAMPLE CHAMBER CONTENTS

| FLUID         | VOLUME  | MEAS. | RESIST. | TEMP.    | CHLOR. |
|---------------|---------|-------|---------|----------|--------|
| GAS:          | - FT.3  | -     | (OHM-M) | (DEG F.) | (PPM)  |
| OIL:          | - CC    | -     |         |          |        |
| WATER:        | - CC    | -     |         |          |        |
| MUD:          | 2050 CC | .07   | 96      | -        | -      |
| FILTRATE:     | -       | .06   | 97      | 760000   | -      |
| TOTAL LIQUID: | 2050 CC | -     |         |          |        |

MUD DATA

|             |         |         |       |
|-------------|---------|---------|-------|
| TYPE:       | -       | -       |       |
| WEIGHT:     | 9.6     | LB/GAL. |       |
| VISCOSITY:  | 38      | SEC.    |       |
| WATER LOSS: | 7.0     | CC      |       |
| FLUID       | RESIST  | TEMP    | CHLOR |
|             | (OHM-M) | (DEG F) | (PPM) |
| MUD:        | .1      | 95      | -     |
| FILTRATE:   | .08     | 90      | 4800  |

REMARKS

----- SURFACE INFORMATION -----

| DESCRIPTION(RATE OF FLOW)               | TIME | PRESSURE<br>PSIG | SURFACE<br>CHOKE |
|---|------|------------------|------------------|
| OPENED TOOL (5-21-79)                   | 1846 | -                | 1/4"             |
| BLOW, 1" IN WATER DECREASING TO NO BLOW | 1915 | -                | "                |
| CLOSED FOR INITIAL SHUT-IN (ATTEMPTED)  | 1947 | -                | "                |
| FINISHED SHUT-IN                        | 2047 | -                | "                |
| RE-OPENED TOOL                          | 2050 | -                | "                |
| NO BLOW                                 |      |                  |                  |
| CLOSED FOR FINAL SHUT-IN (ATTEMPTED)    | 2400 | -                | "                |
| FINISHED SHUT-IN (5-22-79)              | 0600 | -                | "                |
| PULLED PACKER LOOSE                     | 0605 | -                | -                |

|                 |      |        |                        |
|-----------------|------|--------|------------------------|
| CUSHION TYPE: - | - FT | - PSIG | 15/16 IN. BOTTOM CHOKE |
|-----------------|------|--------|------------------------|

----- RECOVERY INFORMATION -----

| RECOVERY     | FEET | BARRELS | %OIL | %WATER | %OTHERS | API<br>GRAV. | DEG. | RESIST | DEG. | CHL   | PPM |
|--------------|------|---------|------|--------|---------|--------------|------|--------|------|-------|-----|
| DRILLING MUD | 97   | .31     | -    | -      | -       | -            | -    | .07    | 96   | 76000 |     |

FIELD REPORT NO. 13823D

FIELD REPORT NO.: 13823 D

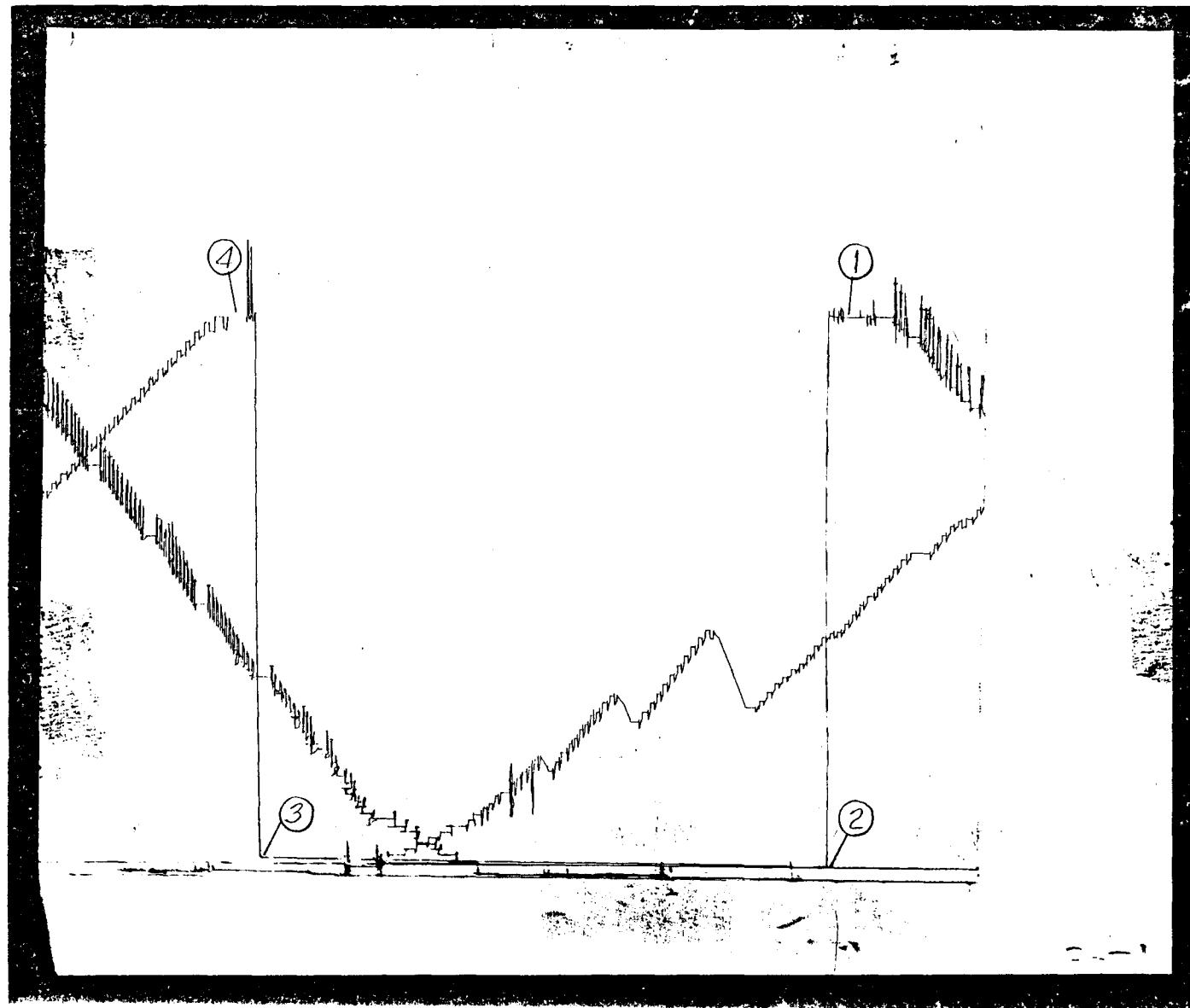
CAPACITY: 6400#

JOHNSTON  
Schlumberger

INSTRUMENT NO.: J-510

NUMBER OF REPORTS: 16-

DID NOT OBTAIN RELIABLE SHUT-IN PERIODS.



# PRESSURE LOG

FIELD REPORT NO. 13823D

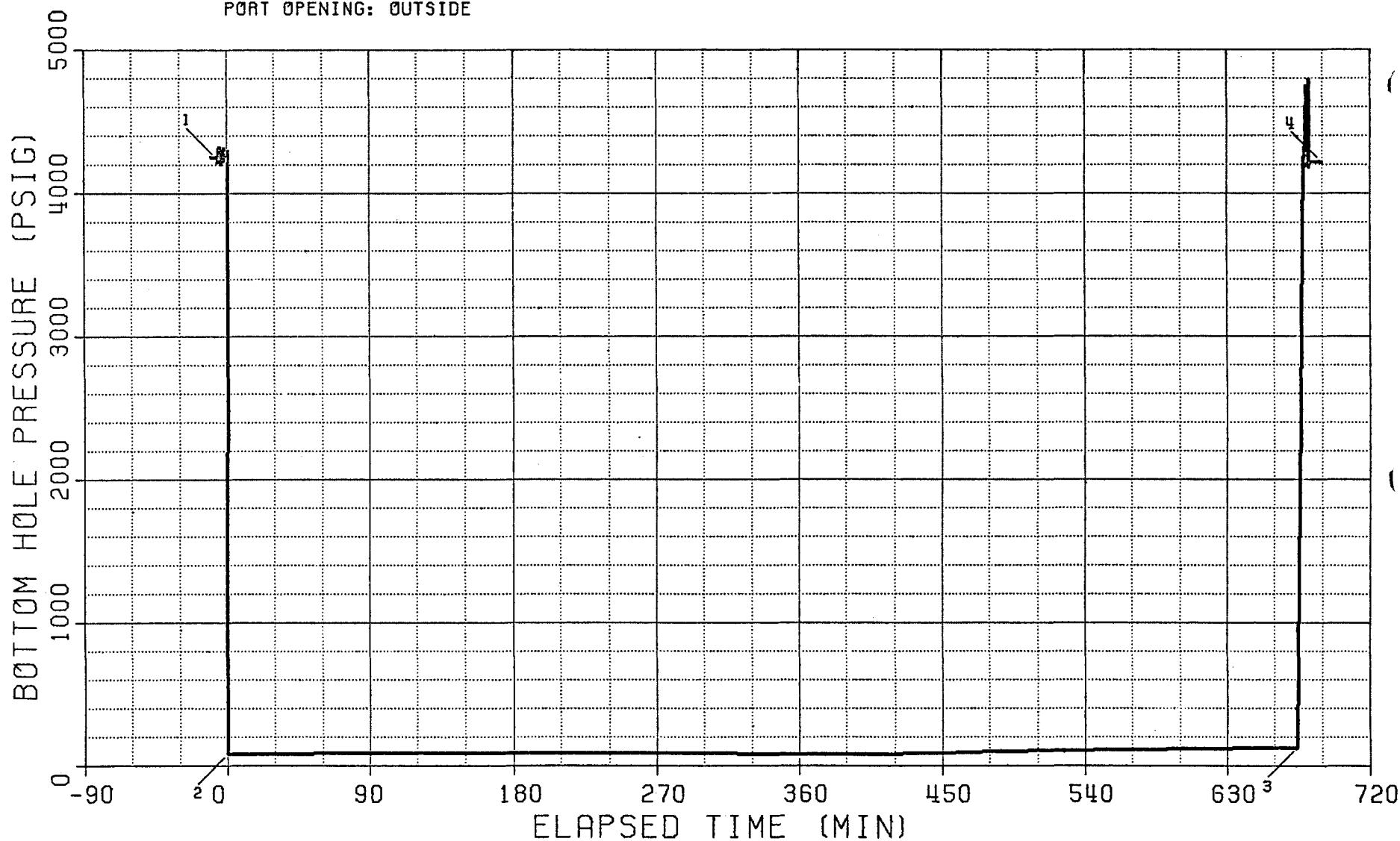
INSTRUMENT:

NUMBER: J-510

CAPACITY: 6400 PSI

DEPTH: 8326 FT

PORT OPENING: OUTSIDE



## BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-510  
PORT OPENING: OUTSIDECAPACITY (PSI): 6400  
BOTTOM HOLE TEMP (F): 194DEPTH (FT): 8326  
PAGE 1

| EXPLANATION | LABELED POINT | PRESSURE (PSIG) | ELAPSED TIME (MIN) |
|-------------|---------------|-----------------|--------------------|
|-------------|---------------|-----------------|--------------------|

|                          |   |      |       |
|--------------------------|---|------|-------|
| HYDROSTATIC MUD          | 1 | 4248 | -6.2  |
| START FLOW               | 2 | 82   | 0.0   |
| END FLOW & START SHUT-IN | 3 | 127  | 674.2 |
| HYDROSTATIC MUD          | 4 | 4220 | 689.3 |

| * SUMMARY OF FLOW PERIODS * |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|
|-----------------------------|--|--|--|--|--|

| FLOW PERIOD | ELAPSED TIME<br>AT START (MIN) | ELAPSED TIME<br>AT END (MIN) | DURATION OF<br>FLOW (MIN) | PRESSURE AT<br>START (PSIG) | PRESSURE AT<br>END (PSIG) |
|-------------|--------------------------------|------------------------------|---------------------------|-----------------------------|---------------------------|
| 1           | 0.0                            | 674.2                        | 674.2                     | 82                          | 127                       |

FIELD REPORT NO. 13823D  
INSTRUMENT NO. J-510

TEST PHASE : FLOW PERIOD # 1  
\*\*\*\*\*

| ELAPSED TIME<br>(MIN) | DELTA TIME<br>(MIN) | FLOWING PRESSURE<br>(PSIG) |
|-----------------------|---------------------|----------------------------|
| *****                 | *****               | *****                      |
| 0.0                   | 0.0                 | 82                         |
| 30.0                  | 30.0                | 83                         |
| 60.0                  | 60.0                | 83                         |
| 90.0                  | 90.0                | 84                         |
| 120.0                 | 120.0               | 85                         |
| 150.0                 | 150.0               | 85                         |
| 180.0                 | 180.0               | 85                         |
| 210.0                 | 210.0               | 85                         |
| 240.0                 | 240.0               | 85                         |
| 270.0                 | 270.0               | 86                         |
| 300.0                 | 300.0               | 85                         |
| 330.0                 | 330.0               | 83                         |
| 360.0                 | 360.0               | 82                         |
| 390.0                 | 390.0               | 83                         |
| 420.0                 | 420.0               | 86                         |
| 450.0                 | 450.0               | 91                         |
| 480.0                 | 480.0               | 98                         |
| 510.0                 | 510.0               | 102                        |
| 540.0                 | 540.0               | 106                        |
| 570.0                 | 570.0               | 110                        |
| 600.0                 | 600.0               | 114                        |
| 630.0                 | 630.0               | 120                        |
| 660.0                 | 660.0               | 125                        |
| 674.2                 | 674.2               | 127                        |

24

**UNITED STATES**  
**DEPARTMENT OF THE INTERIOR**  
**GEOLOGICAL SURVEY**

SUBMIT IN TRIPPLICATE\*  
(Other instructions on reverse side)Form approved.  
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.

U-30650

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OIL  GAS  OTHER Wildcat Well

2. NAME OF OPERATOR  
Forest Oil Corporation

3. ADDRESS OF OPERATOR  
700 Colorado Fed. Bldg. 821 17th St., Denver, Co. 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

2412' FSL & 392' FWL  
Section 14 - T22S-R1W

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

Gr. Elev. 5,408' K.B. Elev. 5,428'

12. COUNTY OR PARISH

Sevier

13. STATE

Utah

## 16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF  
FRACTURE TREAT  
SHOOT OR ACIDIZE  
REPAIR WELL  
(Other)

|  |
|--|
|  |
|  |
|  |
|  |

PULL OR ALTER CASING  
MULTIPLE COMPLETE  
ABANDON\*  
CHANGE PLANS

|  |
|--|
|  |
|  |
|  |
|  |

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF  
FRACTURE TREATMENT  
SHOOTING OR ACIDIZING  
(Other)

|  |
|--|
|  |
|  |
|  |

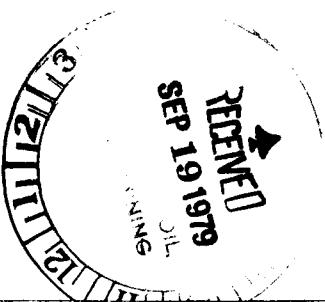
REPAIRING WELL  
ALTERING CASING  
ABANDONMENT\*

|   |
|---|
| X |
|   |
|   |

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) \*

The location of the above described well has been cleaned of all trash, pits backfilled and the area restored nearly as possible to it's original contour. The BLM has requested that we reseed this area in October, 1979. This will be done to conform with the orders of the BLM.



18. I hereby certify that the foregoing is true and correct

SIGNED

TITLE Div. Drdg. &amp; Prod. Mgr.

DATE 9/17/79

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_

DATE \_\_\_\_\_

\*\*\*\*\*  
\*  
\*  
\*  
\*\*\*\*\*  
\*-----  
\*-----SCHLUMBERGER-----\*  
\*-----  
\*\*\*\*\*

43-044-30018

DIPMETER

CLUSTER

CALCULATION

LISTING

FOREST OIL CORPORATION

SIGORD UNIT #1

WILDCAT

SEVIER, UTAH

RUN NO. TWO            JOB NO. 5745

CORRELATION LENGTH      4 FT.

STEP LENGTH              2 FT.

SEARCH ANGLE            40 DEG. X2

24-MAY-79

\*\*\*\*\*  
\*  
\*  
\*  
\*\*\*\*\*  
\*-----\*  
\*-----SCHLUMBERGER-----\*  
\*-----\*  
\*\*\*\*\*

DIPMETER

CLUSTER

CALCULATION

LISTING

FOREST OIL CORPORATION

SIGORD UNIT #1

WILDCAT

SEVIER, UTAH

RUN NO. TWO            JOB NO. 5745

CORRELATION LENGTH        4 FT.

STEP LENGTH                2 FT.

SEARCH ANGLE              40 DEG. X2

24-MAY-79

## FOREST OIL CORPORATION SIGORD UNIT #1 PAGE 1 FILE 1

\*\*\*\*\*

| FORMATION |     |      | BOREHOLE |      |      | QUAL. |       |
|-----------|-----|------|----------|------|------|-------|-------|
| *         | *   | *    | *        | *    | *    | *     | INDEX |
| DEPTH     | DIP | DIP  | DEV.     | DEV. | DIAM | DIAM  | BEST  |
| *         | *   | AZI. | *        | AZI. | 1-3  | 2-4   | =4    |

|   |        |      |     |     |      |      |      |   |
|---|--------|------|-----|-----|------|------|------|---|
| * | 8518.0 |      | 0.7 | 232 | 7.0  | 6.7  | *    |   |
| * | 8520.0 |      | 0.7 | 229 | 7.0  | 7.0  | *    |   |
| * | 8522.0 |      | 0.6 | 227 | 7.0  | 7.1  | *    |   |
| * | 8524.0 |      | 0.6 | 231 | 7.2  | 7.1  | *    |   |
| * | 8526.0 |      | 0.6 | 234 | 7.4  | 7.3  | *    |   |
| * | 8528.0 | 41.3 | 26  | 0.7 | 229  | 7.4  | 7.6  | 3 |
| * | 8530.0 |      | 0.7 | 231 | 7.5  | 7.8  | *    |   |
| * | 8532.0 |      | 0.7 | 232 | 7.4  | 7.9  | *    |   |
| * | 8534.0 |      | 0.7 | 228 | 7.5  | 8.0  | *    |   |
| * | 8536.0 |      | 0.7 | 228 | 7.6  | 8.2  | *    |   |
| * | 8538.0 |      | 0.6 | 223 | 7.8  | 8.5  | *    |   |
| * | 8540.0 |      | 0.6 | 219 | 8.1  | 8.9  | *    |   |
| * | 8542.0 |      | 0.6 | 219 | 8.2  | 9.1  | *    |   |
| * | 8544.0 |      | 0.6 | 215 | 8.3  | 9.3  | *    |   |
| * | 8546.0 |      | 0.5 | 208 | 9.2  | 9.9  | *    |   |
| * | 8548.0 |      | 0.6 | 212 | 10.0 | 10.9 | *    |   |
| * | 8550.0 |      | 0.6 | 216 | 10.8 | 11.8 | *    |   |
| * | 8552.0 |      | 0.6 | 214 | 9.9  | 11.3 | *    |   |
| * | 8554.0 |      | 0.6 | 209 | 7.9  | 9.8  | *    |   |
| * | 8556.0 |      | 0.6 | 208 | 7.3  | 9.1  | *    |   |
| * | 8558.0 |      | 0.5 | 209 | 7.4  | 9.1  | *    |   |
| * | 8560.0 |      | 0.5 | 208 | 7.6  | 9.3  | *    |   |
| * | 8562.0 |      | 0.6 | 208 | 7.6  | 9.5  | *    |   |
| * | 8564.0 |      | 0.6 | 205 | 7.8  | 9.6  | *    |   |
| * | 8566.0 |      | 0.6 | 202 | 8.0  | 9.7  | *    |   |
| * | 8568.0 |      | 0.5 | 200 | 7.7  | 9.3  | *    |   |
| * | 8570.0 |      | 0.5 | 193 | 7.5  | 9.0  | *    |   |
| * | 8572.0 |      | 0.6 | 190 | 7.3  | 8.8  | *    |   |
| * | 8574.0 |      | 0.5 | 188 | 6.8  | 8.4  | *    |   |
| * | 8576.0 |      | 0.5 | 187 | 6.8  | 8.1  | *    |   |
| * | 8578.0 |      | 0.5 | 183 | 7.3  | 8.3  | *    |   |
| * | 8580.0 |      | 0.5 | 180 | 7.5  | 8.7  | *    |   |
| * | 8582.0 |      | 0.5 | 177 | 7.6  | 9.0  | *    |   |
| * | 8584.0 |      | 0.5 | 175 | 7.9  | 9.2  | *    |   |
| * | 8586.0 |      | 0.5 | 174 | 8.4  | 9.4  | *    |   |
| * | 8588.0 |      | 0.5 | 171 | 8.8  | 9.6  | *    |   |
| * | 8590.0 | 81.2 | 295 | 0.5 | 165  | 8.9  | 10.0 | 1 |
| * | 8592.0 |      | 0.5 | 161 | 8.9  | 10.1 | *    |   |
| * | 8594.0 |      | 0.4 | 156 | 8.9  | 10.3 | *    |   |
| * | 8596.0 |      | 0.4 | 153 | 8.9  | 10.3 | *    |   |
| * | 8598.0 |      | 0.5 | 150 | 8.7  | 10.0 | *    |   |
| * | 8600.0 |      | 0.5 | 148 | 8.7  | 9.9  | *    |   |
| * | 8602.0 |      | 0.6 | 147 | 8.8  | 9.9  | *    |   |
| * | 8604.0 | 80.2 | 297 | 0.5 | 143  | 8.9  | 10.0 | 3 |
| * | 8606.0 |      | 0.5 | 138 | 9.0  | 10.0 | *    |   |

\*\*\*\*\*

## FOREST OIL CORPORATION SIGORD UNIT #1

PAGE 2 FILE 1

\*\*\*\*\*

\* FORMATION \* BOREHOLE \* QUAL. \*

\*-----\*-----\*-----\* INDEX \*

\* DEPTH \* DIP DIP \* DEV. DEV. DIAM DIAM \* BEST \*

\* 本 AZI. \* AZI. 1-3 2-4 \* =4 \*

\*\*\*\*\*

|   |        |      |     |     |     |      |     |
|---|--------|------|-----|-----|-----|------|-----|
| * | 8608.0 |      | 0.6 | 135 | 9.1 | 10.0 | *   |
| * | 8610.0 |      | 0.5 | 132 | 9.1 | 10.0 | *   |
| * | 8612.0 |      | 0.5 | 130 | 8.9 | 9.8  | *   |
| * | 8614.0 |      | 0.6 | 126 | 8.6 | 9.5  | *   |
| * | 8616.0 |      | 0.5 | 122 | 8.6 | 9.3  | *   |
| * | 8618.0 |      | 0.5 | 118 | 8.5 | 9.5  | *   |
| * | 8620.0 |      | 0.5 | 111 | 8.4 | 9.3  | *   |
| * | 8622.0 |      | 0.5 | 106 | 8.2 | 8.4  | *   |
| * | 8624.0 |      | 0.5 | 103 | 7.7 | 7.7  | *   |
| * | 8626.0 |      | 0.5 | 101 | 7.4 | 7.3  | *   |
| * | 8628.0 |      | 0.5 | 97  | 7.5 | 7.2  | *   |
| * | 8630.0 |      | 0.6 | 93  | 7.5 | 7.1  | *   |
| * | 8632.0 |      | 0.6 | 93  | 7.5 | 6.8  | *   |
| * | 8634.0 |      | 0.6 | 94  | 7.4 | 6.6  | *   |
| * | 8636.0 |      | 0.6 | 92  | 7.5 | 6.5  | *   |
| * | 8638.0 | 78.5 | 76  | 0.6 | 90  | 7.6  | 6.3 |
| * | 8640.0 |      | 0.6 | 91  | 7.7 | 6.1  | *   |
| * | 8642.0 |      | 0.6 | 90  | 7.8 | 6.1  | *   |
| * | 8644.0 |      | 0.7 | 89  | 7.6 | 5.9  | *   |
| * | 8646.0 |      | 0.7 | 87  | 7.6 | 5.8  | *   |
| * | 8648.0 |      | 0.8 | 80  | 7.6 | 5.7  | *   |
| * | 8650.0 |      | 0.8 | 73  | 7.3 | 5.5  | *   |
| * | 8652.0 |      | 0.8 | 70  | 7.1 | 5.5  | *   |
| * | 8654.0 |      | 0.8 | 66  | 7.2 | 5.4  | *   |
| * | 8656.0 |      | 0.8 | 62  | 7.3 | 5.4  | *   |
| * | 8658.0 |      | 0.8 | 60  | 7.3 | 5.4  | *   |
| * | 8660.0 |      | 0.8 | 61  | 7.4 | 5.3  | *   |
| * | 8662.0 |      | 0.8 | 61  | 7.4 | 5.2  | *   |
| * | 8664.0 |      | 0.8 | 62  | 7.4 | 5.1  | *   |
| * | 8666.0 |      | 0.8 | 64  | 7.4 | 5.0  | *   |
| * | 8668.0 |      | 0.8 | 65  | 7.4 | 5.0  | *   |
| * | 8670.0 |      | 0.8 | 64  | 7.5 | 5.0  | *   |
| * | 8672.0 |      | 0.8 | 64  | 7.5 | 5.2  | *   |
| * | 8674.0 |      | 0.8 | 65  | 7.8 | 5.3  | *   |
| * | 8676.0 |      | 0.9 | 68  | 7.8 | 5.3  | *   |
| * | 8678.0 |      | 0.9 | 69  | 7.7 | 5.2  | *   |
| * | 8680.0 |      | 0.9 | 66  | 7.7 | 5.0  | *   |
| * | 8682.0 |      | 0.9 | 64  | 7.7 | 4.9  | *   |
| * | 8684.0 |      | 0.9 | 63  | 7.6 | 4.9  | *   |
| * | 8686.0 |      | 1.0 | 62  | 7.5 | 4.9  | *   |
| * | 8688.0 |      | 1.0 | 62  | 7.4 | 4.9  | *   |
| * | 8690.0 |      | 1.0 | 60  | 7.2 | 4.9  | *   |
| * | 8692.0 |      | 1.0 | 60  | 7.1 | 4.9  | *   |
| * | 8694.0 |      | 1.1 | 60  | 7.0 | 4.9  | *   |
| * | 8696.0 |      | 1.1 | 60  | 7.0 | 5.0  | *   |

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|   |        |      |     |     |    |     |     |     |
|---|--------|------|-----|-----|----|-----|-----|-----|
| * | 8698.0 |      |     | 1.1 | 59 | 7.0 | 5.0 | *   |
| * | 8700.0 |      |     | 1.1 | 58 | 7.0 | 5.0 | *   |
| * | 8702.0 |      |     | 1.1 | 52 | 7.0 | 5.0 | *   |
| * | 8704.0 |      |     | 1.1 | 59 | 7.0 | 4.9 | *   |
| * | 8706.0 |      |     | 1.2 | 60 | 7.1 | 5.0 | *   |
| * | 8708.0 |      |     | 1.2 | 59 | 7.3 | 5.0 | *   |
| * | 8710.0 |      |     | 1.2 | 58 | 7.4 | 4.9 | *   |
| * | 8712.0 |      |     | 1.1 | 61 | 7.5 | 4.9 | *   |
| * | 8714.0 |      |     | 1.1 | 62 | 7.5 | 5.0 | *   |
| * | 8716.0 |      |     | 1.1 | 61 | 7.5 | 5.0 | *   |
| * | 8718.0 |      |     | 1.1 | 58 | 7.6 | 4.9 | *   |
| * | 8720.0 |      |     | 1.1 | 59 | 7.5 | 5.0 | *   |
| * | 8722.0 |      |     | 1.1 | 61 | 7.2 | 5.1 | *   |
| * | 8724.0 |      |     | 1.2 | 60 | 7.2 | 5.2 | *   |
| * | 8726.0 |      |     | 1.1 | 61 | 7.2 | 5.2 | *   |
| * | 8728.0 |      |     | 1.2 | 60 | 7.3 | 5.3 | *   |
| * | 8730.0 |      |     | 1.1 | 62 | 7.3 | 5.5 | *   |
| * | 8732.0 |      |     | 1.1 | 65 | 7.3 | 5.6 | *   |
| * | 8734.0 |      |     | 1.2 | 65 | 7.3 | 5.5 | *   |
| * | 8736.0 |      |     | 1.2 | 64 | 7.1 | 5.4 | *   |
| * | 8738.0 |      |     | 1.2 | 62 | 7.0 | 5.5 | *   |
| * | 8740.0 |      |     | 1.2 | 60 | 7.1 | 5.5 | *   |
| * | 8742.0 |      |     | 1.2 | 60 | 7.3 | 5.5 | *   |
| * | 8744.0 |      |     | 1.2 | 60 | 7.4 | 5.5 | *   |
| * | 8746.0 |      |     | 1.2 | 57 | 7.4 | 5.9 | *   |
| * | 8748.0 |      |     | 1.2 | 56 | 7.3 | 6.0 | *   |
| * | 8750.0 | 22.8 | 240 | 1.2 | 57 | 7.1 | 5.6 | 3 * |
| * | 8752.0 | 19.1 | 236 | 1.2 | 58 | 6.9 | 5.4 | 1 * |
| * | 8754.0 |      |     | 1.2 | 57 | 6.7 | 5.5 | *   |
| * | 8756.0 |      |     | 1.2 | 57 | 6.8 | 5.5 | *   |
| * | 8758.0 |      |     | 1.2 | 58 | 6.9 | 5.7 | *   |
| * | 8760.0 |      |     | 1.2 | 54 | 7.1 | 5.6 | *   |
| * | 8762.0 |      |     | 1.2 | 52 | 7.3 | 5.5 | *   |
| * | 8764.0 |      |     | 1.2 | 50 | 7.1 | 5.8 | *   |
| * | 8766.0 |      |     | 1.3 | 47 | 7.0 | 6.1 | *   |
| * | 8768.0 |      |     | 1.4 | 45 | 7.0 | 6.2 | *   |
| * | 8770.0 |      |     | 1.4 | 44 | 6.8 | 6.2 | *   |
| * | 8772.0 |      |     | 1.5 | 42 | 7.0 | 6.0 | *   |
| * | 8774.0 |      |     | 1.7 | 39 | 6.9 | 5.7 | *   |
| * | 8776.0 | 18.0 | 185 | 1.8 | 38 | 6.7 | 5.7 | 3 * |
| * | 8778.0 |      |     | 1.8 | 37 | 6.6 | 5.8 | *   |
| * | 8780.0 | 21.9 | 202 | 1.8 | 40 | 6.6 | 5.6 | 1 * |
| * | 8782.0 |      |     | 1.8 | 43 | 6.7 | 5.1 | *   |
| * | 8784.0 |      |     | 1.8 | 39 | 6.9 | 4.8 | *   |
| * | 8786.0 |      |     | 1.8 | 32 | 7.1 | 4.8 | *   |

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|-----------|------|------|------|------|------|------|------|
| *         | *    | AZI. | *    | AZI. | 1-3  | 2-4  | =4   |
| * 8788.0  | 18.6 | 199  | 1.8  | 29   | 7.1  | 4.9  | 3 *  |
| * 8790.0  |      |      | 1.7  | 29   | 6.9  | 4.9  | *    |
| * 8792.0  |      |      | 1.6  | 30   | 6.9  | 4.9  | *    |
| * 8794.0  | 22.5 | 195  | 1.7  | 29   | 6.8  | 5.1  | 1 *  |
| * 8796.0  | 17.5 | 195  | 1.7  | 26   | 6.8  | 5.2  | 1 *  |
| * 8798.0  |      |      | 1.7  | 25   | 6.9  | 5.0  | *    |
| * 8800.0  | 19.0 | 210  | 1.7  | 26   | 6.9  | 5.0  | 1 *  |
| * 8802.0  |      |      | 1.8  | 25   | 7.0  | 5.0  | *    |
| * 8804.0  | 19.9 | 214  | 1.8  | 23   | 7.0  | 5.2  | 1 *  |
| * 8806.0  | 17.9 | 218  | 1.9  | 24   | 7.0  | 5.7  | 1 *  |
| * 8808.0  |      |      | 1.9  | 25   | 6.9  | 6.1  | *    |
| * 8810.0  |      |      | 1.9  | 26   | 6.7  | 6.2  | *    |
| * 8812.0  |      |      | 2.0  | 25   | 6.7  | 6.4  | *    |
| * 8814.0  |      |      | 2.0  | 25   | 6.9  | 6.1  | *    |
| * 8816.0  |      |      | 2.0  | 24   | 7.0  | 5.7  | *    |
| * 8818.0  |      |      | 2.0  | 23   | 7.0  | 5.8  | *    |
| * 8820.0  |      |      | 2.0  | 24   | 7.4  | 6.7  | *    |
| * 8822.0  |      |      | 2.0  | 24   | 7.5  | 7.1  | *    |
| * 8824.0  |      |      | 2.0  | 24   | 7.6  | 7.0  | *    |
| * 8826.0  |      |      | 2.0  | 25   | 8.1  | 7.6  | *    |
| * 8828.0  |      |      | 2.1  | 25   | 8.0  | 7.6  | *    |
| * 8830.0  |      |      | 2.1  | 26   | 7.6  | 7.3  | *    |
| * 8832.0  |      |      | 2.2  | 27   | 7.6  | 7.0  | *    |
| * 8834.0  |      |      | 2.3  | 27   | 7.4  | 6.7  | *    |
| * 8836.0  |      |      | 2.3  | 25   | 7.3  | 6.3  | *    |
| * 8838.0  |      |      | 2.3  | 28   | 7.8  | 5.9  | *    |
| * 8840.0  |      |      | 2.4  | 28   | 7.6  | 5.8  | *    |
| * 8842.0  |      |      | 2.4  | 24   | 7.0  | 5.4  | *    |
| * 8844.0  |      |      | 2.4  | 24   | 6.9  | 5.5  | *    |
| * 8846.0  |      |      | 2.5  | 26   | 6.8  | 5.5  | *    |
| * 8848.0  |      |      | 2.5  | 27   | 6.8  | 5.4  | *    |
| * 8850.0  |      |      | 2.6  | 29   | 6.9  | 5.2  | *    |
| * 8852.0  |      |      | 2.6  | 30   | 6.9  | 5.3  | *    |
| * 8854.0  |      |      | 2.6  | 25   | 6.7  | 5.5  | *    |
| * 8856.0  |      |      | 2.6  | 23   | 6.7  | 5.5  | *    |
| * 8858.0  |      |      | 2.6  | 24   | 6.8  | 5.2  | *    |
| * 8860.0  |      |      | 2.6  | 25   | 7.1  | 5.0  | *    |
| * 8862.0  |      |      | 2.6  | 27   | 7.2  | 4.8  | *    |
| * 8864.0  |      |      | 2.6  | 27   | 6.9  | 4.8  | *    |
| * 8866.0  |      |      | 2.7  | 29   | 6.9  | 4.9  | *    |
| * 8868.0  | 19.3 | 360  | 2.7  | 28   | 7.0  | 5.0  | 3 *  |
| * 8870.0  | 22.2 | 358  | 2.6  | 27   | 7.0  | 5.1  | 1 *  |
| * 8872.0  | 29.7 | 20   | 2.7  | 28   | 7.0  | 5.1  | 3 *  |
| * 8874.0  |      |      | 2.7  | 28   | 7.1  | 5.1  | *    |
| * 8876.0  |      |      | 2.8  | 27   | 7.2  | 5.1  | *    |

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| DEPTH     | DIP | DIP  | DEV.     | DEV. | DIAM | DIAM  | BEST |       |   |
| *         | *   | AZI. | *        | AZI. | 1-3  | 2-4   | =4   | *     | * |

|   |        |      |     |     |     |     |     |   |   |
|---|--------|------|-----|-----|-----|-----|-----|---|---|
| * | 8878.0 |      | 2.8 | 28  | 7.2 | 5.2 |     | * |   |
| * | 8880.0 |      | 2.7 | 30  | 7.1 | 5.1 |     | * |   |
| * | 8882.0 | 15.2 | 350 | 2.7 | 32  | 7.1 | 4.8 | 1 | * |
| * | 8884.0 | 23.9 | 354 | 2.8 | 33  | 7.3 | 4.7 | 1 | * |
| * | 8886.0 |      |     | 2.7 | 32  | 7.3 | 4.7 |   | * |
| * | 8888.0 | 12.7 | 237 | 2.7 | 32  | 7.4 | 4.8 | 3 | * |
| * | 8890.0 |      |     | 2.7 | 36  | 7.3 | 4.9 |   | * |
| * | 8892.0 |      |     | 2.7 | 38  | 7.3 | 4.9 |   | * |
| * | 8894.0 |      |     | 2.6 | 37  | 7.3 | 4.9 |   | * |
| * | 8896.0 |      |     | 2.6 | 36  | 7.4 | 4.8 |   | * |
| * | 8898.0 |      |     | 2.5 | 36  | 7.5 | 4.8 |   | * |
| * | 8900.0 |      |     | 2.5 | 36  | 7.6 | 4.9 |   | * |
| * | 8902.0 |      |     | 2.6 | 36  | 7.8 | 4.8 |   | * |
| * | 8904.0 |      |     | 2.5 | 36  | 8.0 | 5.0 |   | * |
| * | 8906.0 |      |     | 2.5 | 37  | 8.4 | 5.3 |   | * |
| * | 8908.0 |      |     | 2.6 | 39  | 8.3 | 5.3 |   | * |
| * | 8910.0 |      |     | 2.6 | 38  | 7.9 | 5.3 |   | * |
| * | 8912.0 |      |     | 2.6 | 37  | 7.7 | 5.4 |   | * |
| * | 8914.0 |      |     | 2.6 | 36  | 7.4 | 5.2 |   | * |
| * | 8916.0 |      |     | 2.6 | 37  | 7.2 | 5.2 |   | * |
| * | 8918.0 |      |     | 2.6 | 37  | 7.1 | 5.2 |   | * |
| * | 8920.0 |      |     | 2.6 | 39  | 7.0 | 5.2 |   | * |
| * | 8922.0 |      |     | 2.6 | 43  | 6.8 | 5.3 |   | * |
| * | 8924.0 |      |     | 2.6 | 43  | 6.8 | 5.2 |   | * |
| * | 8926.0 |      |     | 2.5 | 42  | 6.9 | 5.0 |   | * |
| * | 8928.0 | 10.5 | 359 | 2.4 | 44  | 6.8 | 5.2 | 1 | * |
| * | 8930.0 | 14.9 | 40  | 2.3 | 44  | 6.8 | 5.5 | 1 | * |
| * | 8932.0 | 13.7 | 11  | 2.2 | 42  | 7.0 | 5.6 | 1 | * |
| * | 8934.0 | 16.5 | 8   | 2.2 | 41  | 7.0 | 5.6 | 3 | * |
| * | 8936.0 |      |     | 2.3 | 40  | 6.9 | 5.4 |   | * |
| * | 8938.0 |      |     | 2.3 | 42  | 6.9 | 5.2 |   | * |
| * | 8940.0 |      |     | 2.3 | 45  | 7.0 | 5.1 |   | * |
| * | 8942.0 |      |     | 2.3 | 47  | 6.9 | 4.9 |   | * |
| * | 8944.0 |      |     | 2.3 | 51  | 6.9 | 4.9 |   | * |
| * | 8946.0 |      |     | 2.2 | 58  | 6.8 | 5.0 |   | * |
| * | 8948.0 |      |     | 2.1 | 61  | 6.8 | 4.9 |   | * |
| * | 8950.0 | 18.7 | 28  | 2.0 | 60  | 7.0 | 4.9 | 1 | * |
| * | 8952.0 | 18.4 | 39  | 2.0 | 58  | 6.9 | 4.9 | 3 | * |
| * | 8954.0 | 16.4 | 38  | 2.0 | 57  | 6.9 | 5.1 | 3 | * |
| * | 8956.0 | 14.3 | 25  | 2.0 | 59  | 6.9 | 5.3 | 1 | * |
| * | 8958.0 |      |     | 2.0 | 60  | 7.0 | 5.2 |   | * |
| * | 8960.0 |      |     | 2.0 | 60  | 7.1 | 5.0 |   | * |
| * | 8962.0 | 15.2 | 17  | 2.0 | 59  | 6.9 | 5.0 | 1 | * |
| * | 8964.0 | 23.8 | 25  | 2.0 | 59  | 6.9 | 5.0 | 1 | * |
| * | 8966.0 |      |     | 2.0 | 57  | 7.2 | 5.2 |   | * |

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|-------|-----|------|------|------|------|------|------|
| *     | *   | AZI. | *    | AZI. | 1-3  | 2-4  | =4   |

|          |      |    |     |     |     |     |   |
|----------|------|----|-----|-----|-----|-----|---|
| * 8968.0 |      |    | 2.0 | 55  | 7.8 | 5.5 | * |
| * 8970.0 |      |    | 2.0 | 55  | 8.4 | 5.8 | * |
| * 8972.0 |      |    | 2.0 | 55  | 7.8 | 5.4 | * |
| * 8974.0 |      |    | 2.0 | 53  | 7.0 | 4.9 | * |
| * 8976.0 |      |    | 2.0 | 52  | 6.9 | 4.9 | * |
| * 8978.0 |      |    | 2.0 | 51  | 6.9 | 4.9 | * |
| * 8980.0 |      |    | 1.9 | 51  | 6.9 | 5.0 | * |
| * 8982.0 |      |    | 1.7 | 51  | 6.9 | 5.0 | * |
| * 8984.0 |      |    | 1.6 | 53  | 6.9 | 4.9 | * |
| * 8986.0 |      |    | 1.5 | 53  | 6.9 | 5.0 | * |
| * 8988.0 |      |    | 1.3 | 53  | 6.9 | 5.0 | * |
| * 8990.0 |      |    | 1.2 | 54  | 6.8 | 5.0 | * |
| * 8992.0 |      |    | 1.1 | 57  | 6.8 | 4.9 | * |
| * 8994.0 |      |    | 0.9 | 59  | 6.9 | 4.9 | * |
| * 8996.0 |      |    | 0.8 | 61  | 6.8 | 4.9 | * |
| * 8998.0 |      |    | 0.8 | 67  | 6.8 | 4.9 | * |
| * 9000.0 |      |    | 0.8 | 71  | 6.9 | 5.1 | * |
| * 9002.0 |      |    | 0.9 | 71  | 6.9 | 5.1 | * |
| * 9004.0 |      |    | 0.9 | 71  | 6.9 | 5.0 | * |
| * 9006.0 |      |    | 0.9 | 72  | 6.8 | 5.1 | * |
| * 9008.0 | 31.9 | 92 | 0.9 | 72  | 6.9 | 5.2 | 1 |
| * 9010.0 | 29.0 | 90 | 1.0 | 73  | 6.9 | 5.0 | 3 |
| * 9012.0 |      |    | 1.0 | 74  | 6.8 | 4.9 | * |
| * 9014.0 | 24.2 | 96 | 1.1 | 76  | 6.7 | 4.9 | 1 |
| * 9016.0 | 26.3 | 95 | 1.2 | 75  | 6.8 | 4.8 | 3 |
| * 9018.0 | 31.0 | 99 | 1.2 | 75  | 6.8 | 4.8 | 1 |
| * 9020.0 |      |    | 1.2 | 75  | 6.7 | 4.8 | * |
| * 9022.0 |      |    | 1.2 | 74  | 6.7 | 4.8 | * |
| * 9024.0 |      |    | 1.2 | 72  | 6.7 | 4.8 | * |
| * 9026.0 |      |    | 1.2 | 72  | 6.7 | 4.8 | * |
| * 9028.0 |      |    | 1.2 | 72  | 6.7 | 4.8 | * |
| * 9030.0 |      |    | 1.2 | 73  | 6.6 | 4.8 | * |
| * 9032.0 |      |    | 1.1 | 75  | 6.7 | 4.8 | * |
| * 9034.0 |      |    | 1.0 | 73  | 6.7 | 4.8 | * |
| * 9036.0 |      |    | 1.0 | 72  | 6.7 | 4.8 | * |
| * 9038.0 |      |    | 0.9 | 80  | 6.7 | 4.9 | * |
| * 9040.0 |      |    | 0.9 | 85  | 6.6 | 4.8 | * |
| * 9042.0 |      |    | 0.9 | 91  | 6.6 | 4.6 | * |
| * 9044.0 |      |    | 0.9 | 93  | 6.6 | 4.6 | * |
| * 9046.0 |      |    | 1.0 | 91  | 6.7 | 4.7 | * |
| * 9048.0 |      |    | 1.0 | 97  | 6.6 | 4.7 | * |
| * 9050.0 |      |    | 0.9 | 102 | 6.4 | 4.7 | * |
| * 9052.0 |      |    | 0.8 | 102 | 6.4 | 4.6 | * |
| * 9054.0 |      |    | 0.8 | 98  | 6.5 | 4.5 | * |
| * 9056.0 |      |    | 1.0 | 97  | 6.6 | 4.5 | * |

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\* 9058.0 1.2 103 6.7 4.6 \*

\* 9060.0 1.4 106 6.7 4.6 \*

\* 9062.0 2.2 105 6.7 4.6 \*

\* 9064.0 3.9 105 6.7 4.6 \*

\* 9066.0 8.5 109 6.7 4.6 \*

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|-----------|------|-----|------|------|------|------|------|
| *         | AZI. | *   | AZI. | 1-3  | 2-4  | =4   | *    |
| * 8520.0  | 83.7 | 169 | 0.8  | 223  | 8.5  | 5.1  | 3 *  |
| * 8522.0  |      |     | 0.8  | 223  | 8.6  | 5.2  | *    |
| * 8524.0  |      |     | 0.8  | 223  | 8.5  | 5.3  | *    |
| * 8526.0  | 49.0 | 21  | 0.8  | 222  | 8.6  | 5.5  | 3 *  |
| * 8528.0  | 47.8 | 20  | 0.8  | 221  | 8.8  | 5.6  | 1 *  |
| * 8530.0  |      |     | 0.8  | 221  | 9.0  | 5.6  | *    |
| * 8532.0  |      |     | 0.9  | 220  | 9.2  | 5.6  | *    |
| * 8534.0  |      |     | 0.9  | 218  | 9.2  | 5.6  | *    |
| * 8536.0  | 85.3 | 169 | 0.8  | 217  | 9.3  | 5.8  | 1 *  |
| * 8538.0  |      |     | 0.8  | 216  | 9.6  | 6.0  | *    |
| * 8540.0  |      |     | 0.8  | 213  | 9.9  | 6.5  | *    |
| * 8542.0  |      |     | 0.7  | 211  | 10.1 | 6.7  | *    |
| * 8544.0  |      |     | 0.7  | 210  | 10.3 | 6.7  | *    |
| * 8546.0  |      |     | 0.6  | 206  | 10.5 | 7.5  | *    |
| * 8548.0  |      |     | 0.7  | 205  | 11.2 | 8.7  | *    |
| * 8550.0  |      |     | 0.7  | 209  | 11.9 | 9.4  | *    |
| * 8552.0  |      |     | 0.7  | 208  | 12.1 | 9.3  | *    |
| * 8554.0  |      |     | 0.7  | 204  | 11.2 | 7.2  | *    |
| * 8556.0  |      |     | 0.7  | 199  | 10.1 | 5.6  | *    |
| * 8558.0  |      |     | 0.7  | 196  | 10.1 | 5.7  | *    |
| * 8560.0  |      |     | 0.7  | 195  | 10.2 | 5.9  | *    |
| * 8562.0  | 63.8 | 360 | 0.7  | 195  | 10.4 | 5.8  | 3 *  |
| * 8564.0  |      |     | 0.7  | 193  | 10.5 | 6.0  | *    |
| * 8566.0  |      |     | 0.7  | 192  | 10.6 | 6.2  | *    |
| * 8568.0  |      |     | 0.6  | 190  | 10.4 | 6.1  | *    |
| * 8570.0  | 57.6 | 358 | 0.6  | 184  | 10.2 | 5.7  | 1 *  |
| * 8572.0  |      |     | 0.6  | 179  | 10.0 | 5.6  | *    |
| * 8574.0  |      |     | 0.6  | 178  | 9.7  | 5.2  | *    |
| * 8576.0  |      |     | 0.6  | 176  | 9.4  | 4.8  | *    |
| * 8578.0  |      |     | 0.6  | 176  | 9.4  | 5.4  | *    |
| * 8580.0  |      |     | 0.6  | 174  | 9.7  | 5.7  | *    |
| * 8582.0  |      |     | 0.6  | 172  | 9.9  | 5.7  | *    |
| * 8584.0  |      |     | 0.6  | 170  | 10.1 | 6.1  | *    |
| * 8586.0  |      |     | 0.6  | 168  | 10.3 | 6.5  | *    |
| * 8588.0  |      |     | 0.6  | 167  | 10.6 | 7.1  | *    |
| * 8590.0  |      |     | 0.6  | 161  | 10.8 | 7.5  | *    |
| * 8592.0  |      |     | 0.6  | 154  | 10.9 | 7.5  | *    |
| * 8594.0  |      |     | 0.6  | 151  | 11.0 | 7.5  | *    |
| * 8596.0  |      |     | 0.7  | 147  | 11.1 | 7.5  | *    |
| * 8598.0  |      |     | 0.7  | 145  | 11.0 | 7.4  | *    |
| * 8600.0  |      |     | 0.7  | 145  | 10.7 | 7.3  | *    |
| * 8602.0  |      |     | 0.7  | 144  | 10.8 | 7.3  | *    |
| * 8604.0  |      |     | 0.7  | 139  | 10.9 | 7.4  | *    |
| * 8606.0  |      |     | 0.7  | 135  | 10.9 | 7.5  | *    |
| * 8608.0  |      |     | 0.7  | 132  | 10.9 | 7.6  | *    |

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|          |      |     |     |     |      |     |     |
|----------|------|-----|-----|-----|------|-----|-----|
| * 8610.0 |      |     | 0.7 | 128 | 10.9 | 7.8 | *   |
| * 8612.0 |      |     | 0.7 | 127 | 10.8 | 7.6 | *   |
| * 8614.0 |      |     | 0.6 | 126 | 10.6 | 7.4 | *   |
| * 8616.0 |      |     | 0.6 | 123 | 10.3 | 7.1 | *   |
| * 8618.0 |      |     | 0.7 | 119 | 10.3 | 7.2 | *   |
| * 8620.0 |      |     | 0.7 | 113 | 10.4 | 7.0 | *   |
| * 8622.0 |      |     | 0.7 | 110 | 9.9  | 6.7 | *   |
| * 8624.0 |      |     | 0.7 | 106 | 9.1  | 6.2 | *   |
| * 8626.0 |      |     | 0.7 | 103 | 8.7  | 5.7 | *   |
| * 8628.0 |      |     | 0.7 | 100 | 8.7  | 5.7 | *   |
| * 8630.0 |      |     | 0.7 | 97  | 8.6  | 5.7 | *   |
| * 8632.0 |      |     | 0.7 | 95  | 8.3  | 5.7 | *   |
| * 8634.0 |      |     | 0.7 | 92  | 8.1  | 5.7 | *   |
| * 8636.0 |      |     | 0.8 | 90  | 8.1  | 5.8 | *   |
| * 8638.0 |      |     | 0.8 | 87  | 7.9  | 5.9 | *   |
| * 8640.0 |      |     | 0.8 | 84  | 7.7  | 5.8 | *   |
| * 8642.0 |      |     | 0.8 | 79  | 7.7  | 6.0 | *   |
| * 8644.0 |      |     | 0.9 | 72  | 7.6  | 6.0 | *   |
| * 8645.0 |      |     | 0.8 | 70  | 7.6  | 5.9 | *   |
| * 8648.0 |      |     | 0.8 | 66  | 7.5  | 5.9 | *   |
| * 8650.0 |      |     | 0.9 | 62  | 7.4  | 5.6 | *   |
| * 8652.0 |      |     | 0.8 | 58  | 7.3  | 5.4 | *   |
| * 8654.0 |      |     | 0.8 | 54  | 7.3  | 5.3 | *   |
| * 8656.0 |      |     | 0.8 | 50  | 7.3  | 5.3 | *   |
| * 8658.0 |      |     | 0.8 | 48  | 7.2  | 5.4 | *   |
| * 8660.0 |      |     | 0.8 | 46  | 7.1  | 5.5 | *   |
| * 8662.0 |      |     | 0.8 | 45  | 7.0  | 5.5 | *   |
| * 8664.0 |      |     | 0.9 | 48  | 7.0  | 5.5 | *   |
| * 8666.0 |      |     | 0.9 | 51  | 6.9  | 5.5 | *   |
| * 8668.0 |      |     | 0.8 | 52  | 6.9  | 5.6 | *   |
| * 8670.0 |      |     | 0.8 | 51  | 6.9  | 5.6 | *   |
| * 8672.0 |      |     | 0.8 | 53  | 7.0  | 5.7 | *   |
| * 8674.0 |      |     | 0.9 | 54  | 7.0  | 6.0 | *   |
| * 8676.0 |      |     | 0.9 | 56  | 7.0  | 6.2 | *   |
| * 8678.0 |      |     | 0.9 | 56  | 7.0  | 6.1 | *   |
| * 8680.0 |      |     | 0.9 | 54  | 6.9  | 6.2 | *   |
| * 8682.0 |      |     | 0.9 | 51  | 6.9  | 6.1 | *   |
| * 8684.0 |      |     | 0.9 | 50  | 6.8  | 6.0 | *   |
| * 8686.0 |      |     | 1.0 | 52  | 6.8  | 5.8 | *   |
| * 8688.0 | 44.0 | 295 | 1.0 | 52  | 6.8  | 5.5 | 1 * |
| * 8690.0 | 46.7 | 292 | 0.9 | 50  | 6.8  | 5.3 | 3 * |
| * 8692.0 |      |     | 0.9 | 49  | 6.8  | 5.3 | *   |
| * 8694.0 |      |     | 1.0 | 47  | 6.8  | 5.2 | *   |
| * 8696.0 |      |     | 0.9 | 45  | 6.9  | 5.2 | *   |
| * 8698.0 |      |     | 0.9 | 46  | 6.9  | 5.2 | *   |

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|   |        |      |     |     |     |     |     |
|---|--------|------|-----|-----|-----|-----|-----|
| * | 8700.0 |      | 0.9 | 48  | 6.9 | 5.1 | *   |
| * | 8702.0 |      | 0.9 | 49  | 6.9 | 5.0 | *   |
| * | 8704.0 |      | 0.9 | 49  | 6.8 | 5.1 | *   |
| * | 8706.0 |      | 0.9 | 51  | 6.9 | 5.2 | *   |
| * | 8708.0 |      | 0.9 | 52  | 6.9 | 5.4 | *   |
| * | 8710.0 |      | 0.9 | 49  | 6.8 | 5.6 | *   |
| * | 8712.0 |      | 0.9 | 48  | 6.8 | 5.7 | *   |
| * | 8714.0 |      | 0.9 | 50  | 6.9 | 5.7 | *   |
| * | 8716.0 |      | 0.9 | 50  | 6.9 | 5.7 | *   |
| * | 8718.0 |      | 1.0 | 48  | 6.9 | 5.8 | *   |
| * | 8720.0 |      | 1.0 | 49  | 6.9 | 5.9 | *   |
| * | 8722.0 |      | 1.0 | 50  | 7.0 | 5.6 | *   |
| * | 8724.0 |      | 1.0 | 50  | 7.0 | 5.4 | *   |
| * | 8726.0 |      | 1.0 | 51  | 7.0 | 5.4 | *   |
| * | 8728.0 |      | 1.0 | 51  | 7.1 | 5.4 | *   |
| * | 8730.0 |      | 1.0 | 54  | 7.2 | 5.4 | *   |
| * | 8732.0 |      | 1.0 | 57  | 7.3 | 5.5 | *   |
| * | 8734.0 |      | 1.0 | 55  | 7.3 | 5.4 | *   |
| * | 8736.0 |      | 1.0 | 55  | 7.3 | 5.2 | *   |
| * | 8738.0 |      | 1.0 | 55  | 7.3 | 5.1 | *   |
| * | 8740.0 |      | 1.0 | 53  | 7.3 | 5.2 | *   |
| * | 8742.0 |      | 1.0 | 51  | 7.3 | 5.4 | *   |
| * | 8744.0 | 24.4 | 232 | 1.0 | 50  | 7.3 | 5.5 |
| * | 8746.0 | 19.6 | 240 | 1.0 | 50  | 7.5 | 5.5 |
| * | 8748.0 | 26.5 | 243 | 1.0 | 50  | 7.8 | 5.5 |
| * | 8750.0 | 25.5 | 245 | 1.0 | 49  | 7.6 | 5.4 |
| * | 8752.0 | 19.6 | 246 | 1.0 | 48  | 7.3 | 5.1 |
| * | 8754.0 |      |     | 1.0 | 49  | 7.3 | 4.8 |
| * | 8756.0 |      |     | 1.1 | 50  | 7.3 | 4.9 |
| * | 8758.0 |      |     | 1.1 | 50  | 7.4 | 5.0 |
| * | 8760.0 |      |     | 1.0 | 51  | 7.4 | 5.2 |
| * | 8762.0 |      |     | 1.0 | 52  | 7.3 | 5.4 |
| * | 8764.0 |      |     | 1.1 | 51  | 7.5 | 5.4 |
| * | 8766.0 |      |     | 1.2 | 48  | 7.6 | 5.2 |
| * | 8768.0 |      |     | 1.2 | 43  | 7.8 | 5.2 |
| * | 8770.0 |      |     | 1.2 | 39  | 7.8 | 5.1 |
| * | 8772.0 |      |     | 1.3 | 36  | 7.7 | 5.0 |
| * | 8774.0 |      |     | 1.4 | 34  | 7.6 | 5.1 |
| * | 8776.0 |      |     | 1.4 | 32  | 7.5 | 4.9 |
| * | 8778.0 |      |     | 1.4 | 29  | 7.6 | 4.7 |
| * | 8780.0 |      |     | 1.4 | 33  | 7.4 | 4.7 |
| * | 8782.0 |      |     | 1.4 | 37  | 7.1 | 4.8 |
| * | 8784.0 |      |     | 1.4 | 34  | 6.9 | 4.9 |
| * | 8786.0 | 17.4 | 216 | 1.4 | 32  | 6.8 | 5.2 |
| * | 8788.0 | 18.4 | 205 | 1.4 | 32  | 6.8 | 5.3 |

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|   |        |      |     |     |    |     |     |   |   |
|---|--------|------|-----|-----|----|-----|-----|---|---|
| * | 8790.0 | 15.2 | 197 | 1.4 | 33 | 6.8 | 5.1 | 3 | * |
| * | 8792.0 |      |     | 1.4 | 35 | 6.8 | 4.9 |   | * |
| * | 8794.0 |      |     | 1.4 | 34 | 6.9 | 4.9 |   | * |
| * | 8796.0 |      |     | 1.4 | 33 | 7.0 | 4.9 |   | * |
| * | 8798.0 | 14.4 | 202 | 1.4 | 33 | 6.9 | 4.9 | 1 | * |
| * | 8800.0 |      |     | 1.5 | 33 | 6.9 | 5.0 |   | * |
| * | 8802.0 |      |     | 1.6 | 33 | 6.9 | 5.1 |   | * |
| * | 8804.0 |      |     | 1.6 | 31 | 7.0 | 5.1 |   | * |
| * | 8806.0 | 15.5 | 108 | 1.7 | 32 | 7.2 | 5.1 | 1 | * |
| * | 8808.0 |      |     | 1.8 | 33 | 7.7 | 5.1 |   | * |
| * | 8810.0 |      |     | 1.8 | 32 | 7.9 | 4.9 |   | * |
| * | 8812.0 | 15.0 | 141 | 1.8 | 30 | 7.9 | 4.8 | 1 | * |
| * | 8814.0 |      |     | 1.8 | 27 | 7.9 | 4.8 |   | * |
| * | 8816.0 |      |     | 1.8 | 26 | 7.7 | 5.0 |   | * |
| * | 8818.0 | 19.3 | 133 | 1.9 | 27 | 7.4 | 5.0 | 3 | * |
| * | 8820.0 |      |     | 1.9 | 27 | 7.8 | 5.3 |   | * |
| * | 8822.0 | 20.9 | 287 | 2.0 | 27 | 8.3 | 5.5 | 1 | * |
| * | 8824.0 |      |     | 2.0 | 28 | 8.5 | 5.7 |   | * |
| * | 8826.0 |      |     | 2.0 | 29 | 8.7 | 5.9 |   | * |
| * | 8828.0 |      |     | 2.0 | 29 | 8.9 | 6.5 |   | * |
| * | 8830.0 |      |     | 2.0 | 28 | 8.9 | 6.1 |   | * |
| * | 8832.0 | 20.9 | 301 | 2.0 | 30 | 8.6 | 5.6 | 1 | * |
| * | 8834.0 |      |     | 2.0 | 31 | 8.3 | 5.7 |   | * |
| * | 8836.0 |      |     | 2.0 | 30 | 8.0 | 5.6 |   | * |
| * | 8838.0 |      |     | 2.0 | 28 | 7.7 | 5.8 |   | * |
| * | 8840.0 |      |     | 2.1 | 27 | 7.4 | 6.2 |   | * |
| * | 8842.0 |      |     | 2.1 | 27 | 7.2 | 5.5 |   | * |
| * | 8844.0 | 10.6 | 162 | 2.2 | 26 | 7.3 | 5.0 | 1 | * |
| * | 8846.0 |      |     | 2.2 | 25 | 7.3 | 4.9 |   | * |
| * | 8848.0 |      |     | 2.3 | 26 | 7.1 | 4.9 |   | * |
| * | 8850.0 |      |     | 2.2 | 30 | 6.9 | 5.1 |   | * |
| * | 8852.0 |      |     | 2.2 | 32 | 7.1 | 5.0 |   | * |
| * | 8854.0 |      |     | 2.3 | 28 | 7.3 | 4.9 |   | * |
| * | 8856.0 |      |     | 2.3 | 26 | 7.3 | 4.8 |   | * |
| * | 8858.0 | 13.6 | 170 | 2.3 | 26 | 7.2 | 4.8 | 1 | * |
| * | 8860.0 |      |     | 2.3 | 26 | 7.0 | 4.9 |   | * |
| * | 8862.0 |      |     | 2.4 | 29 | 6.9 | 4.9 |   | * |
| * | 8864.0 |      |     | 2.4 | 33 | 6.8 | 4.8 |   | * |
| * | 8866.0 |      |     | 2.4 | 35 | 6.8 | 4.8 |   | * |
| * | 8868.0 |      |     | 2.5 | 36 | 7.0 | 4.9 |   | * |
| * | 8870.0 | 29.0 | 50  | 2.5 | 37 | 7.0 | 5.1 | 1 | * |
| * | 8872.0 | 26.5 | 39  | 2.5 | 38 | 7.0 | 5.1 | 3 | * |
| * | 8874.0 | 26.0 | 49  | 2.6 | 38 | 7.0 | 5.0 | 3 | * |
| * | 8876.0 |      |     | 2.7 | 37 | 7.2 | 5.1 |   | * |
| * | 8878.0 |      |     | 2.8 | 37 | 7.3 | 5.3 |   | * |

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 \* 8880.0 2.8 39 7.1 5.1 \*  
 \* 8882.0 2.8 40 7.1 5.0 \*  
 \* 8884.0 2.8 42 7.2 4.8 \*  
 \* 8886.0 18.9 250 2.8 43 7.3 4.8 1 \*  
 \* 8888.0 13.0 243 2.8 42 7.4 4.8 3 \*  
 \* 8890.0 11.5 243 2.8 43 7.4 4.9 1 \*  
 \* 8892.0 2.7 43 7.4 4.9 \*  
 \* 8894.0 2.6 44 7.4 4.9 \*  
 \* 8896.0 2.6 45 7.3 4.8 \*  
 \* 8898.0 2.6 47 7.4 4.8 \*  
 \* 8900.0 2.6 49 7.5 4.9 \*  
 \* 8902.0 2.6 48 7.8 4.9 \*  
 \* 8904.0 2.6 47 7.9 4.9 \*  
 \* 8906.0 2.6 48 8.1 5.2 \*  
 \* 8908.0 2.6 47 8.5 5.3 \*  
 \* 8910.0 2.6 47 8.1 5.3 \*  
 \* 8912.0 2.7 48 7.7 5.4 \*  
 \* 8914.0 2.7 47 7.6 5.3 \*  
 \* 8916.0 2.8 44 7.2 5.2 \*  
 \* 8918.0 2.8 43 7.1 5.2 \*  
 \* 8920.0 2.8 44 7.0 5.2 \*  
 \* 8922.0 2.8 45 6.9 5.3 \*  
 \* 8924.0 2.8 47 6.8 5.3 \*  
 \* 8926.0 2.8 47 6.9 5.1 \*  
 \* 8928.0 2.8 47 6.9 5.0 \*  
 \* 8930.0 11.6 64 2.8 48 6.8 5.2 1 \*  
 \* 8932.0 6.0 85 2.8 49 6.9 5.5 3 \*  
 \* 8934.0 7.4 107 2.8 47 7.0 5.6 1 \*  
 \* 8936.0 2.8 46 7.0 5.4 \*  
 \* 8938.0 2.7 46 6.9 5.1 \*  
 \* 8940.0 2.7 47 6.9 5.2 \*  
 \* 8942.0 2.6 47 6.9 5.2 \*  
 \* 8944.0 2.5 47 6.9 5.0 \*  
 \* 8946.0 2.4 49 6.8 5.0 \*  
 \* 8948.0 2.3 50 6.8 5.2 \*  
 \* 8950.0 2.1 50 6.8 5.2 \*  
 \* 8952.0 2.0 51 6.9 5.0 \*  
 \* 8954.0 2.0 52 7.1 5.0 \*  
 \* 8956.0 2.0 51 7.3 4.9 \*  
 \* 8958.0 2.0 51 7.4 4.9 \*  
 \* 8960.0 2.0 51 7.3 4.9 \*  
 \* 8962.0 2.0 51 7.2 4.9 \*  
 \* 8964.0 1.9 51 7.0 4.9 \*  
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|   |        |      |     |     |     |     |     |     |
|---|--------|------|-----|-----|-----|-----|-----|-----|
| * | 8970.0 |      |     | 1.8 | 47  | 7.5 | 6.2 | *   |
| * | 8972.0 |      |     | 1.7 | 45  | 7.3 | 6.4 | *   |
| * | 8974.0 |      |     | 1.7 | 44  | 7.0 | 5.7 | *   |
| * | 8976.0 |      |     | 1.6 | 47  | 6.9 | 5.2 | *   |
| * | 8978.0 | 80.7 | 228 | 1.6 | 48  | 6.9 | 5.0 | 1 * |
| * | 8980.0 |      |     | 1.6 | 51  | 7.0 | 5.0 | *   |
| * | 8982.0 | 47.3 | 299 | 1.5 | 54  | 7.0 | 5.0 | 1 * |
| * | 8984.0 | 45.1 | 302 | 1.4 | 55  | 6.9 | 4.9 | 1 * |
| * | 8986.0 |      |     | 1.3 | 56  | 6.9 | 4.9 | *   |
| * | 8988.0 |      |     | 1.3 | 58  | 6.9 | 5.0 | *   |
| * | 8990.0 |      |     | 1.2 | 60  | 6.9 | 5.0 | *   |
| * | 8992.0 |      |     | 1.1 | 68  | 6.9 | 5.0 | *   |
| * | 8994.0 |      |     | 1.1 | 72  | 6.9 | 4.9 | *   |
| * | 8996.0 |      |     | 1.0 | 75  | 6.9 | 4.9 | *   |
| * | 8998.0 |      |     | 1.0 | 81  | 6.9 | 4.9 | *   |
| * | 9000.0 |      |     | 1.1 | 85  | 6.9 | 4.9 | *   |
| * | 9002.0 |      |     | 1.1 | 81  | 7.0 | 5.0 | *   |
| * | 9004.0 |      |     | 1.2 | 76  | 7.0 | 5.0 | *   |
| * | 9006.0 |      |     | 1.2 | 75  | 7.0 | 4.9 | *   |
| * | 9008.0 |      |     | 1.2 | 74  | 7.2 | 4.8 | *   |
| * | 9010.0 | 18.6 | 82  | 1.2 | 72  | 7.0 | 4.9 | 1 * |
| * | 9012.0 | 22.1 | 99  | 1.2 | 71  | 6.9 | 4.9 | 1 * |
| * | 9014.0 | 20.7 | 109 | 1.2 | 70  | 6.8 | 4.9 | 3 * |
| * | 9016.0 | 19.5 | 93  | 1.2 | 70  | 6.8 | 4.9 | 3 * |
| * | 9018.0 | 16.5 | 112 | 1.2 | 68  | 6.8 | 4.8 | 1 * |
| * | 9020.0 |      |     | 1.2 | 66  | 6.8 | 4.8 | *   |
| * | 9022.0 |      |     | 1.2 | 65  | 6.8 | 4.7 | *   |
| * | 9024.0 |      |     | 1.2 | 66  | 6.7 | 4.6 | *   |
| * | 9026.0 | 26.6 | 281 | 1.2 | 66  | 6.7 | 4.6 | 1 * |
| * | 9028.0 | 18.7 | 290 | 1.2 | 67  | 6.8 | 4.8 | 1 * |
| * | 9030.0 | 17.4 | 282 | 1.2 | 67  | 6.8 | 4.8 | 1 * |
| * | 9032.0 | 21.3 | 287 | 1.0 | 71  | 6.8 | 4.9 | 1 * |
| * | 9034.0 |      |     | 0.9 | 74  | 6.8 | 4.8 | *   |
| * | 9036.0 |      |     | 0.7 | 77  | 6.7 | 4.7 | *   |
| * | 9038.0 |      |     | 0.6 | 91  | 6.7 | 4.8 | *   |
| * | 9040.0 |      |     | 0.6 | 104 | 6.7 | 4.7 | *   |
| * | 9042.0 |      |     | 0.6 | 104 | 6.6 | 4.6 | *   |
| * | 9044.0 |      |     | 0.6 | 109 | 6.6 | 4.6 | *   |
| * | 9046.0 |      |     | 0.6 | 113 | 6.6 | 4.6 | *   |
| * | 9048.0 |      |     | 0.7 | 112 | 6.6 | 4.7 | *   |
| * | 9050.0 |      |     | 0.9 | 112 | 6.5 | 4.6 | *   |
| * | 9052.0 |      |     | 0.9 | 105 | 6.4 | 4.6 | *   |
| * | 9054.0 |      |     | 1.0 | 94  | 6.5 | 4.6 | *   |
| * | 9056.0 |      |     | 1.1 | 95  | 6.6 | 4.6 | *   |
| * | 9058.0 |      |     | 1.3 | 98  | 6.6 | 4.7 | *   |

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\* 9060.0 1.9 96 6.7 4.8 \*  
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\*-----SCHLUMBERGER-----  
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**SCHLUMBERGER DIRECTIONAL SURVEY**

**FOREST OIL CORPORATION**

**SIGORD UNIT #1**

**WILDCAT**

**SEVIER COUNTY, UTAH**

|           |          |        |           |      |
|-----------|----------|--------|-----------|------|
| RUN NO. 1 | 722.0 -  | 8490.0 | 29-APR-79 | 5712 |
| RUN NO. 2 | 8518.0 - | 9066.0 | 20-MAY-79 | 5745 |

**START OF SURVEY AT 722 FT.**

**RADIUS OF CURVATURE METHOD**

**REFERENCE JOB 5745.**

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\*-----SCHLUMBERGER-----\*  
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**SCHLUMBERGER DIRECTIONAL SURVEY**

**FOREST OIL CORPORATION**

**SIGORD UNIT #1**

**WILDCAT**

**SEVIER COUNTY, UTAH**

|           |          |        |           |      |
|-----------|----------|--------|-----------|------|
| RUN NO. 1 | 722.0 -  | 8490.0 | 29-APR-79 | 5712 |
| RUN NO. 2 | 8518.0 - | 9066.0 | 20-MAY-79 | 5745 |

**START OF SURVEY AT 722 FT.**

**RADIUS OF CURVATURE METHOD**

**REFERENCE JOB 5745.**

| * DEPTH<br>* FEET             | * DEVIATION<br>* DEGREES | * AZIMUTH<br>* DEGREES | * VERTICAL<br>* FEET | * CO-ORDINATES *              |                  |                    |                    |
|-------------------------------|--------------------------|------------------------|----------------------|-------------------------------|------------------|--------------------|--------------------|
|                               |                          |                        |                      | * NORTH<br>* FEET             | * EAST<br>* FEET | * LENGTH<br>* FEET | * COURSE<br>* FEET |
| * + NORTH * + EAST * LENGTH * |                          |                        |                      | * - SOUTH * - WEST * COURSE * |                  |                    |                    |
| 722.0                         | 1.2                      | 46.0                   | 722.0                | 0.0                           | 0.0              | 0.0                | 0.0                |
| 740.0                         | 1.2                      | 45.0                   | 740.0                | 0.2                           | 0.3              | 0.4                | 0.4                |
| 760.0                         | 1.2                      | 37.0                   | 760.0                | 0.6                           | 0.6              | 0.8                | 0.8                |
| 780.0                         | 1.2                      | 36.0                   | 780.0                | 0.9                           | 0.8              | 1.2                | 1.2                |
| 800.0                         | 1.1                      | 36.0                   | 800.0                | 1.2                           | 1.1              | 1.6                | 1.6                |
| 820.0                         | 1.2                      | 33.0                   | 820.0                | 1.5                           | 1.3              | 2.0                | 2.0                |
| 840.0                         | 1.2                      | 24.0                   | 840.0                | 1.9                           | 1.5              | 2.4                | 2.4                |
| 860.0                         | 1.2                      | 26.0                   | 860.0                | 2.3                           | 1.7              | 2.8                | 2.8                |
| 880.0                         | 1.2                      | 23.0                   | 880.0                | 2.7                           | 1.8              | 3.2                | 3.2                |
| 900.0                         | 1.2                      | 23.0                   | 900.0                | 3.1                           | 2.0              | 3.7                | 3.7                |
| 920.0                         | 1.2                      | 24.0                   | 920.0                | 3.4                           | 2.2              | 4.1                | 4.1                |
| 940.0                         | 1.2                      | 24.0                   | 940.0                | 3.8                           | 2.3              | 4.5                | 4.5                |
| 960.0                         | 1.2                      | 21.0                   | 959.9                | 4.2                           | 2.5              | 4.9                | 4.9                |
| 980.0                         | 1.4                      | 20.0                   | 979.9                | 4.6                           | 2.6              | 5.3                | 5.3                |
| 1000.0                        | 1.3                      | 19.0                   | 999.9                | 5.1                           | 2.8              | 5.8                | 5.8                |
| 1020.0                        | 1.5                      | 16.0                   | 1019.9               | 5.5                           | 2.9              | 6.3                | 6.3                |
| 1040.0                        | 1.6                      | 18.0                   | 1039.9               | 6.1                           | 3.1              | 6.8                | 6.8                |
| 1060.0                        | 1.6                      | 19.0                   | 1059.9               | 6.6                           | 3.3              | 7.4                | 7.4                |
| 1080.0                        | 1.6                      | 13.0                   | 1079.9               | 7.1                           | 3.4              | 7.9                | 7.9                |
| 1100.0                        | 1.5                      | 15.0                   | 1099.9               | 7.7                           | 3.5              | 8.4                | 8.4                |
| 1120.0                        | 1.6                      | 13.0                   | 1119.9               | 8.2                           | 3.7              | 9.0                | 9.0                |
| 1140.0                        | 1.6                      | 13.0                   | 1139.9               | 8.7                           | 3.8              | 9.5                | 9.5                |
| 1160.0                        | 1.7                      | 13.0                   | 1159.9               | 9.3                           | 3.9              | 10.1               | 10.1               |
| 1180.0                        | 1.9                      | 7.0                    | 1179.9               | 9.9                           | 4.0              | 10.7               | 10.7               |
| 1200.0                        | 1.7                      | 7.0                    | 1199.9               | 10.5                          | 4.1              | 11.3               | 11.3               |
| 1220.0                        | 2.0                      | 5.0                    | 1219.8               | 11.2                          | 4.1              | 11.9               | 11.9               |
| 1240.0                        | 2.0                      | 2.0                    | 1239.8               | 11.9                          | 4.2              | 12.6               | 12.6               |
| 1260.0                        | 2.3                      | 1.0                    | 1259.8               | 12.6                          | 4.2              | 13.3               | 13.3               |
| 1280.0                        | 2.5                      | 357.0                  | 1279.8               | 13.5                          | 4.2              | 14.1               | 14.1               |
| 1300.0                        | 2.7                      | 356.0                  | 1299.8               | 14.4                          | 4.1              | 15.0               | 15.0               |
| 1320.0                        | 2.6                      | 358.0                  | 1319.8               | 15.3                          | 4.1              | 15.8               | 15.8               |
| 1340.0                        | 2.6                      | 355.0                  | 1339.7               | 16.2                          | 4.0              | 16.7               | 16.7               |
| 1360.0                        | 2.4                      | 354.0                  | 1359.7               | 17.1                          | 4.0              | 17.5               | 17.5               |
| 1380.0                        | 2.5                      | 349.0                  | 1379.7               | 17.9                          | 3.8              | 18.3               | 18.3               |
| 1400.0                        | 2.2                      | 345.0                  | 1399.7               | 18.7                          | 3.6              | 19.1               | 19.1               |
| 1420.0                        | 2.2                      | 347.0                  | 1419.7               | 19.5                          | 3.4              | 19.7               | 19.7               |
| 1440.0                        | 2.2                      | 338.0                  | 1439.7               | 20.2                          | 3.2              | 20.4               | 20.4               |
| 1460.0                        | 2.0                      | 332.0                  | 1459.6               | 20.8                          | 2.9              | 21.0               | 21.0               |
| 1480.0                        | 2.0                      | 328.0                  | 1479.6               | 21.4                          | 2.5              | 21.5               | 21.5               |
| 1500.0                        | 2.0                      | 335.0                  | 1499.6               | 22.0                          | 2.1              | 22.1               | 22.1               |
| 1520.0                        | 2.0                      | 333.0                  | 1519.6               | 22.6                          | 1.8              | 22.7               | 22.7               |
| 1540.0                        | 2.0                      | 329.0                  | 1539.6               | 23.2                          | 1.5              | 23.3               | 23.3               |
| 1560.0                        | 2.0                      | 329.0                  | 1559.6               | 23.8                          | 1.1              | 23.8               | 23.8               |
| 1580.0                        | 2.0                      | 328.0                  | 1579.6               | 24.4                          | 0.8              | 24.4               | 24.4               |
| 1600.0                        | 2.0                      | 324.0                  | 1599.6               | 25.0                          | 0.4              | 25.0               | 25.0               |
| 1620.0                        | 2.0                      | 321.0                  | 1619.5               | 25.5                          | -0.0             | 25.5               | 25.5               |

| * DEPTH<br>* FEET | * DEVIATION<br>* DEGREES | * AZIMUTH<br>* DEGREES | * VERTICAL<br>* DEPTH<br>* FEET | * CO-ORDINATES * |             |            | * COURSE * |
|-------------------|--------------------------|------------------------|---------------------------------|------------------|-------------|------------|------------|
|                   |                          |                        |                                 | * + NORTH *      | * - SOUTH * | * + EAST * |            |
| * 1640.0 *        | * 2.0                    | * 321.0                | * 1639.5                        | * 26.1           | * -0.5      | * 26.1     | *          |
| * 1660.0 *        | * 2.0                    | * 317.0                | * 1659.5                        | * 26.6           | * -0.9      | * 26.6     | *          |
| * 1680.0 *        | * 2.0                    | * 314.0                | * 1679.5                        | * 27.1           | * -1.4      | * 27.2     | *          |
| * 1700.0 *        | * 2.0                    | * 316.0                | * 1699.5                        | * 27.7           | * -1.9      | * 27.7     | *          |
| * 1720.0 *        | * 2.2                    | * 312.0                | * 1719.5                        | * 28.2           | * -2.5      | * 28.3     | *          |
| * 1740.0 *        | * 2.4                    | * 317.0                | * 1739.5                        | * 28.7           | * -3.0      | * 28.9     | *          |
| * 1760.0 *        | * 2.5                    | * 314.0                | * 1759.5                        | * 29.3           | * -3.6      | * 29.5     | *          |
| * 1780.0 *        | * 2.2                    | * 313.0                | * 1779.4                        | * 29.9           | * -4.2      | * 30.2     | *          |
| * 1800.0 *        | * 2.2                    | * 313.0                | * 1799.4                        | * 30.4           | * -4.8      | * 30.8     | *          |
| * 1820.0 *        | * 2.2                    | * 313.0                | * 1819.4                        | * 31.0           | * -5.4      | * 31.4     | *          |
| * 1840.0 *        | * 2.2                    | * 308.0                | * 1839.4                        | * 31.5           | * -5.9      | * 32.0     | *          |
| * 1860.0 *        | * 2.2                    | * 306.0                | * 1859.4                        | * 31.9           | * -6.6      | * 32.6     | *          |
| * 1880.0 *        | * 2.1                    | * 304.0                | * 1879.4                        | * 32.3           | * -7.2      | * 33.1     | *          |
| * 1900.0 *        | * 2.3                    | * 306.0                | * 1899.3                        | * 32.8           | * -7.8      | * 33.7     | *          |
| * 1920.0 *        | * 2.4                    | * 300.0                | * 1919.3                        | * 33.2           | * -8.5      | * 34.3     | *          |
| * 1940.0 *        | * 2.6                    | * 301.0                | * 1939.3                        | * 33.7           | * -9.3      | * 34.9     | *          |
| * 1960.0 *        | * 2.6                    | * 303.0                | * 1959.3                        | * 34.1           | * -10.0     | * 35.6     | *          |
| * 1980.0 *        | * 2.5                    | * 303.0                | * 1979.3                        | * 34.6           | * -10.8     | * 36.3     | *          |
| * 2000.0 *        | * 2.5                    | * 302.0                | * 1999.2                        | * 35.1           | * -11.5     | * 36.9     | *          |
| * 2020.0 *        | * 2.6                    | * 302.0                | * 2019.2                        | * 35.6           | * -12.3     | * 37.6     | *          |
| * 2040.0 *        | * 2.7                    | * 301.0                | * 2039.2                        | * 36.0           | * -13.1     | * 38.3     | *          |
| * 2060.0 *        | * 2.7                    | * 307.0                | * 2059.2                        | * 36.6           | * -13.8     | * 39.1     | *          |
| * 2080.0 *        | * 2.8                    | * 304.0                | * 2079.2                        | * 37.1           | * -14.6     | * 39.9     | *          |
| * 2100.0 *        | * 2.8                    | * 301.0                | * 2099.1                        | * 37.7           | * -15.4     | * 40.7     | *          |
| * 2120.0 *        | * 3.0                    | * 305.0                | * 2119.1                        | * 38.2           | * -16.3     | * 41.6     | *          |
| * 2140.0 *        | * 3.0                    | * 306.0                | * 2139.1                        | * 38.9           | * -17.1     | * 42.5     | *          |
| * 2160.0 *        | * 3.0                    | * 305.0                | * 2159.1                        | * 39.4           | * -18.0     | * 43.4     | *          |
| * 2180.0 *        | * 3.2                    | * 306.0                | * 2179.0                        | * 40.1           | * -18.9     | * 44.3     | *          |
| * 2200.0 *        | * 3.1                    | * 306.0                | * 2199.0                        | * 40.7           | * -19.7     | * 45.2     | *          |
| * 2220.0 *        | * 3.4                    | * 308.0                | * 2219.0                        | * 41.4           | * -20.7     | * 46.3     | *          |
| * 2240.0 *        | * 3.4                    | * 307.0                | * 2238.9                        | * 42.1           | * -21.6     | * 47.3     | *          |
| * 2260.0 *        | * 3.5                    | * 308.0                | * 2258.9                        | * 42.9           | * -22.6     | * 48.4     | *          |
| * 2280.0 *        | * 3.6                    | * 311.0                | * 2278.9                        | * 43.7           | * -23.5     | * 49.6     | *          |
| * 2300.0 *        | * 3.6                    | * 310.0                | * 2298.8                        | * 44.5           | * -24.5     | * 50.8     | *          |
| * 2320.0 *        | * 3.7                    | * 309.0                | * 2318.8                        | * 45.3           | * -25.4     | * 52.0     | *          |
| * 2340.0 *        | * 3.9                    | * 311.0                | * 2338.7                        | * 46.2           | * -26.4     | * 53.2     | *          |
| * 2360.0 *        | * 3.9                    | * 308.0                | * 2358.7                        | * 47.0           | * -27.5     | * 54.5     | *          |
| * 2380.0 *        | * 4.0                    | * 307.0                | * 2378.6                        | * 47.9           | * -28.6     | * 55.8     | *          |
| * 2400.0 *        | * 3.9                    | * 306.0                | * 2398.6                        | * 48.7           | * -29.6     | * 57.1     | *          |
| * 2420.0 *        | * 4.1                    | * 309.0                | * 2418.5                        | * 49.6           | * -30.7     | * 58.4     | *          |
| * 2440.0 *        | * 4.4                    | * 309.0                | * 2438.5                        | * 50.6           | * -31.9     | * 59.8     | *          |
| * 2460.0 *        | * 4.4                    | * 309.0                | * 2458.4                        | * 51.5           | * -33.1     | * 61.2     | *          |
| * 2480.0 *        | * 4.5                    | * 311.0                | * 2478.4                        | * 52.5           | * -34.3     | * 62.7     | *          |
| * 2500.0 *        | * 4.6                    | * 311.0                | * 2498.3                        | * 53.6           | * -35.5     | * 64.2     | *          |
| * 2520.0 *        | * 4.8                    | * 311.0                | * 2518.2                        | * 54.6           | * -36.7     | * 65.8     | *          |
| * 2540.0 *        | * 4.8                    | * 312.0                | * 2538.2                        | * 55.8           | * -38.0     | * 67.4     | *          |

| * DEPTH<br>* FEET | * DEVIATION<br>* DEGREES | * AZIMUTH<br>* DEGREES | * VERTICAL<br>* FEET | * TRUE * CO-ORDINATES * |                      | * COURSE *<br>* LENGTH *<br>* FEET * |
|-------------------|--------------------------|------------------------|----------------------|-------------------------|----------------------|--------------------------------------|
|                   |                          |                        |                      | * + NORTH * + EAST *    | * - SOUTH * - WEST * |                                      |
| * 2560.0 *        | * 5.0                    | * 310.0                | * 2558.1             | * 56.9 *                | -39.2 *              | 69.1 *                               |
| * 2580.0 *        | * 5.1                    | * 311.0                | * 2578.0             | * 58.0 *                | -40.6 *              | 70.8 *                               |
| * 2600.0 *        | * 5.2                    | * 312.0                | * 2597.9             | * 59.2 *                | -41.9 *              | 72.6 *                               |
| * 2620.0 *        | * 5.2                    | * 311.0                | * 2617.9             | * 60.4 *                | -43.3 *              | 74.3 *                               |
| * 2640.0 *        | * 5.3                    | * 310.0                | * 2637.8             | * 61.6 *                | -44.6 *              | 76.1 *                               |
| * 2660.0 *        | * 5.3                    | * 309.0                | * 2657.7             | * 62.8 *                | -46.1 *              | 77.9 *                               |
| * 2680.0 *        | * 5.7                    | * 311.0                | * 2677.6             | * 64.1 *                | -47.5 *              | 79.8 *                               |
| * 2700.0 *        | * 5.6                    | * 312.0                | * 2697.5             | * 65.4 *                | -49.0 *              | 81.7 *                               |
| * 2720.0 *        | * 5.3                    | * 309.0                | * 2717.4             | * 66.6 *                | -50.4 *              | 83.5 *                               |
| * 2740.0 *        | * 5.7                    | * 307.0                | * 2737.3             | * 67.8 *                | -51.9 *              | 85.4 *                               |
| * 2760.0 *        | * 5.3                    | * 308.0                | * 2757.2             | * 69.0 *                | -53.4 *              | 87.3 *                               |
| * 2780.0 *        | * 5.9                    | * 308.0                | * 2777.1             | * 70.3 *                | -54.9 *              | 89.2 *                               |
| * 2800.0 *        | * 5.5                    | * 308.0                | * 2797.0             | * 71.5 *                | -56.4 *              | 91.1 *                               |
| * 2820.0 *        | * 5.6                    | * 305.0                | * 2816.9             | * 72.7 *                | -58.0 *              | 93.0 *                               |
| * 2840.0 *        | * 5.8                    | * 302.0                | * 2836.8             | * 73.8 *                | -59.6 *              | 94.9 *                               |
| * 2860.0 *        | * 5.9                    | * 302.0                | * 2856.7             | * 74.9 *                | -61.4 *              | 96.8 *                               |
| * 2880.0 *        | * 5.9                    | * 308.0                | * 2876.6             | * 76.1 *                | -63.0 *              | 98.8 *                               |
| * 2900.0 *        | * 6.0                    | * 305.0                | * 2896.5             | * 77.3 *                | -64.7 *              | 100.8 *                              |
| * 2920.0 *        | * 6.0                    | * 305.0                | * 2916.4             | * 78.5 *                | -66.4 *              | 102.8 *                              |
| * 2940.0 *        | * 6.1                    | * 302.0                | * 2936.3             | * 79.7 *                | -68.1 *              | 104.8 *                              |
| * 2960.0 *        | * 5.8                    | * 306.0                | * 2956.2             | * 80.8 *                | -69.8 *              | 106.8 *                              |
| * 2980.0 *        | * 5.4                    | * 305.0                | * 2976.1             | * 82.0 *                | -71.4 *              | 108.7 *                              |
| * 3000.0 *        | * 5.3                    | * 306.0                | * 2996.0             | * 83.1 *                | -72.9 *              | 110.5 *                              |
| * 3020.0 *        | * 5.2                    | * 306.0                | * 3015.9             | * 84.1 *                | -74.4 *              | 112.3 *                              |
| * 3040.0 *        | * 5.3                    | * 304.0                | * 3035.8             | * 85.2 *                | -75.9 *              | 114.1 *                              |
| * 3060.0 *        | * 5.2                    | * 310.0                | * 3055.8             | * 86.3 *                | -77.4 *              | 115.9 *                              |
| * 3080.0 *        | * 5.2                    | * 308.0                | * 3075.7             | * 87.4 *                | -78.8 *              | 117.7 *                              |
| * 3100.0 *        | * 5.4                    | * 308.0                | * 3095.6             | * 88.5 *                | -80.3 *              | 119.5 *                              |
| * 3120.0 *        | * 4.9                    | * 306.0                | * 3115.5             | * 89.6 *                | -81.7 *              | 121.3 *                              |
| * 3140.0 *        | * 5.2                    | * 303.0                | * 3135.4             | * 90.6 *                | -83.2 *              | 123.0 *                              |
| * 3160.0 *        | * 5.0                    | * 303.0                | * 3155.4             | * 91.5 *                | -84.7 *              | 124.7 *                              |
| * 3180.0 *        | * 4.8                    | * 301.0                | * 3175.3             | * 92.4 *                | -86.1 *              | 126.4 *                              |
| * 3200.0 *        | * 4.5                    | * 306.0                | * 3195.2             | * 93.3 *                | -87.5 *              | 127.9 *                              |
| * 3220.0 *        | * 4.4                    | * 307.0                | * 3215.2             | * 94.2 *                | -88.8 *              | 129.4 *                              |
| * 3240.0 *        | * 4.3                    | * 316.0                | * 3235.1             | * 95.2 *                | -89.9 *              | 130.9 *                              |
| * 3260.0 *        | * 4.2                    | * 320.0                | * 3255.0             | * 96.3 *                | -90.9 *              | 132.4 *                              |
| * 3280.0 *        | * 4.2                    | * 316.0                | * 3275.0             | * 97.4 *                | -92.0 *              | 133.9 *                              |
| * 3300.0 *        | * 4.1                    | * 315.0                | * 3294.9             | * 98.5 *                | -92.9 *              | 135.4 *                              |
| * 3320.0 *        | * 4.4                    | * 318.0                | * 3314.9             | * 99.6 *                | -94.0 *              | 136.9 *                              |
| * 3340.0 *        | * 4.2                    | * 320.0                | * 3334.8             | * 100.7 *               | -95.0 *              | 138.4 *                              |
| * 3360.0 *        | * 3.9                    | * 311.0                | * 3354.8             | * 101.9 *               | -95.9 *              | 139.9 *                              |
| * 3380.0 *        | * 4.3                    | * 316.0                | * 3374.7             | * 102.8 *               | -96.9 *              | 141.3 *                              |
| * 3400.0 *        | * 4.4                    | * 318.0                | * 3394.7             | * 103.9 *               | -98.0 *              | 142.8 *                              |
| * 3420.0 *        | * 4.5                    | * 320.0                | * 3414.6             | * 105.1 *               | -99.0 *              | 144.4 *                              |
| * 3440.0 *        | * 4.4                    | * 321.0                | * 3434.5             | * 106.2 *               | -100.0 *             | 145.9 *                              |
| * 3460.0 *        | * 4.4                    | * 321.0                | * 3454.5             | * 107.4 *               | -101.0 *             | 147.4 *                              |

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 \* DEPTH \* DEVIATION \* AZIMUTH \* VERTICAL \* CO-ORDINATES \* COURSE \*  
 \* FEET \* DEGREES \* DEGREES \* DEPTH \* + NORTH \* + EAST \* LENGTH \*  
 \* \* \* \* FEET \* - SOUTH \* - WEST \* FEET \*  
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\* 3480.0 \* 4.5 \* 325.0 \* 3474.4 \* 108.7 \* -101.9 \* 149.0 \*  
 \* 3500.0 \* 4.4 \* 326.0 \* 3494.4 \* 109.9 \* -102.8 \* 150.5 \*  
 \* 3520.0 \* 4.4 \* 331.0 \* 3514.3 \* 111.2 \* -103.7 \* 152.1 \*  
 \* 3540.0 \* 4.4 \* 328.0 \* 3534.2 \* 112.6 \* -104.5 \* 153.6 \*  
 \* 3560.0 \* 4.4 \* 332.0 \* 3554.2 \* 113.9 \* -105.2 \* 155.1 \*  
 \* 3580.0 \* 4.4 \* 330.0 \* 3574.1 \* 115.3 \* -106.0 \* 156.6 \*  
 \* 3600.0 \* 4.2 \* 334.0 \* 3594.1 \* 116.6 \* -106.7 \* 158.0 \*  
 \* 3620.0 \* 5.2 \* 334.0 \* 3614.0 \* 118.1 \* -107.4 \* 159.6 \*  
 \* 3640.0 \* 5.0 \* 331.0 \* 3633.9 \* 119.6 \* -108.3 \* 161.4 \*  
 \* 3660.0 \* 4.6 \* 337.0 \* 3653.8 \* 121.1 \* -109.0 \* 162.9 \*  
 \* 3680.0 \* 4.6 \* 338.0 \* 3673.8 \* 122.6 \* -109.6 \* 164.4 \*  
 \* 3700.0 \* 4.7 \* 339.0 \* 3693.7 \* 124.1 \* -110.2 \* 166.0 \*  
 \* 3720.0 \* 4.9 \* 337.0 \* 3713.6 \* 125.6 \* -110.8 \* 167.5 \*  
 \* 3740.0 \* 4.9 \* 335.0 \* 3733.6 \* 127.2 \* -111.5 \* 169.2 \*  
 \* 3760.0 \* 4.6 \* 338.0 \* 3753.5 \* 128.7 \* -112.2 \* 170.8 \*  
 \* 3780.0 \* 5.2 \* 338.0 \* 3773.4 \* 130.3 \* -112.9 \* 172.4 \*  
 \* 3800.0 \* 5.4 \* 339.0 \* 3793.3 \* 132.0 \* -113.6 \* 174.1 \*  
 \* 3820.0 \* 5.5 \* 333.0 \* 3813.3 \* 133.7 \* -114.3 \* 175.9 \*  
 \* 3840.0 \* 5.5 \* 333.0 \* 3833.2 \* 135.4 \* -115.1 \* 177.7 \*  
 \* 3860.0 \* 5.4 \* 333.0 \* 3853.1 \* 137.2 \* -116.0 \* 179.6 \*  
 \* 3880.0 \* 5.3 \* 334.0 \* 3873.0 \* 138.8 \* -116.8 \* 181.4 \*  
 \* 3900.0 \* 5.3 \* 334.0 \* 3892.9 \* 140.4 \* -117.7 \* 183.2 \*  
 \* 3920.0 \* 5.2 \* 336.0 \* 3912.8 \* 142.1 \* -118.5 \* 185.0 \*  
 \* 3940.0 \* 5.4 \* 335.0 \* 3932.7 \* 143.7 \* -119.2 \* 186.7 \*  
 \* 3960.0 \* 5.6 \* 336.0 \* 3952.6 \* 145.5 \* -120.0 \* 188.6 \*  
 \* 3980.0 \* 5.5 \* 338.0 \* 3972.5 \* 147.3 \* -120.8 \* 190.5 \*  
 \* 4000.0 \* 5.9 \* 334.0 \* 3992.4 \* 149.1 \* -121.6 \* 192.4 \*  
 \* 4020.0 \* 5.4 \* 336.0 \* 4012.3 \* 151.0 \* -122.4 \* 194.3 \*  
 \* 4040.0 \* 5.7 \* 339.0 \* 4032.2 \* 152.7 \* -123.1 \* 196.2 \*  
 \* 4060.0 \* 5.6 \* 337.0 \* 4052.1 \* 154.6 \* -123.9 \* 198.1 \*  
 \* 4080.0 \* 5.3 \* 339.0 \* 4072.1 \* 156.4 \* -124.6 \* 200.0 \*  
 \* 4100.0 \* 5.2 \* 340.0 \* 4092.0 \* 158.1 \* -125.3 \* 201.7 \*  
 \* 4120.0 \* 5.2 \* 340.0 \* 4111.9 \* 159.8 \* -125.9 \* 203.4 \*  
 \* 4140.0 \* 5.2 \* 335.0 \* 4131.6 \* 161.4 \* -126.6 \* 205.2 \*  
 \* 4160.0 \* 5.2 \* 334.0 \* 4151.7 \* 163.1 \* -127.3 \* 206.9 \*  
 \* 4180.0 \* 5.2 \* 333.0 \* 4171.6 \* 164.7 \* -128.2 \* 208.7 \*  
 \* 4200.0 \* 5.3 \* 328.0 \* 4191.6 \* 166.4 \* -129.1 \* 210.6 \*  
 \* 4220.0 \* 5.6 \* 328.0 \* 4211.5 \* 168.0 \* -130.0 \* 212.4 \*  
 \* 4240.0 \* 5.6 \* 328.0 \* 4231.4 \* 169.6 \* -131.0 \* 214.4 \*  
 \* 4260.0 \* 5.4 \* 331.0 \* 4251.3 \* 171.3 \* -132.0 \* 216.3 \*  
 \* 4280.0 \* 5.2 \* 330.0 \* 4271.2 \* 173.0 \* -133.0 \* 218.2 \*  
 \* 4300.0 \* 5.3 \* 330.0 \* 4291.1 \* 174.6 \* -133.9 \* 220.0 \*  
 \* 4320.0 \* 5.4 \* 328.0 \* 4311.0 \* 176.2 \* -134.8 \* 221.9 \*  
 \* 4340.0 \* 5.5 \* 328.0 \* 4330.9 \* 177.8 \* -135.9 \* 223.8 \*  
 \* 4360.0 \* 5.7 \* 328.0 \* 4350.8 \* 179.4 \* -136.9 \* 225.7 \*  
 \* 4380.0 \* 5.7 \* 327.0 \* 4370.7 \* 181.1 \* -138.0 \* 227.7 \*

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REF 5745.

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 \* \* \* \* \* TRUE CO-ORDINATES \* \* \* \* \*  
 \* DEPTH \* DEVIATION \* AZIMUTH \* VERTICAL \* \* \* \* \* COURSE \*  
 \* FEET \* DEGREES \* DEGREES \* DEPTH \* + NORTH \* + EAST \* LENGTH \*  
 \* \* \* \* \* FEET \* - SOUTH \* - WEST \* FEET \*  
 \*\*\*\*\*

|            |     |   |       |   |        |   |       |   |        |   |       |
|------------|-----|---|-------|---|--------|---|-------|---|--------|---|-------|
| * 8080.0 * | 2.5 | * | 245.0 | * | 8057.1 | * | 257.7 | * | -419.1 | * | 492.0 |
| * 8100.0 * | 2.8 | * | 244.0 | * | 8077.1 | * | 257.3 | * | -419.9 | * | 492.5 |
| * 8120.0 * | 2.8 | * | 244.0 | * | 8097.1 | * | 256.9 | * | -420.8 | * | 493.0 |
| * 8140.0 * | 2.7 | * | 245.0 | * | 8117.1 | * | 256.5 | * | -421.6 | * | 493.5 |
| * 8160.0 * | 2.5 | * | 247.0 | * | 8137.1 | * | 256.1 | * | -422.5 | * | 494.0 |
| * 8180.0 * | 2.6 | * | 247.0 | * | 8157.0 | * | 255.7 | * | -423.3 | * | 494.5 |
| * 8200.0 * | 2.4 | * | 240.0 | * | 8177.0 | * | 255.4 | * | -424.1 | * | 495.0 |
| * 8220.0 * | 2.6 | * | 251.0 | * | 8197.0 | * | 255.0 | * | -424.8 | * | 495.5 |
| * 8240.0 * | 2.1 | * | 250.0 | * | 8217.0 | * | 254.7 | * | -425.6 | * | 496.0 |
| * 8260.0 * | 2.1 | * | 253.0 | * | 8237.0 | * | 254.5 | * | -426.3 | * | 496.5 |
| * 8280.0 * | 2.0 | * | 252.0 | * | 8257.0 | * | 254.2 | * | -427.0 | * | 497.0 |
| * 8300.0 * | 1.9 | * | 264.0 | * | 8276.9 | * | 254.1 | * | -427.6 | * | 497.4 |
| * 8320.0 * | 1.5 | * | 262.0 | * | 8296.9 | * | 254.0 | * | -428.2 | * | 497.9 |
| * 8340.0 * | 1.2 | * | 270.0 | * | 8316.9 | * | 254.0 | * | -428.7 | * | 498.3 |
| * 8360.0 * | 1.1 | * | 266.0 | * | 8336.9 | * | 254.0 | * | -429.1 | * | 498.6 |
| * 8380.0 * | 0.7 | * | 258.0 | * | 8356.9 | * | 253.9 | * | -429.4 | * | 498.8 |
| * 8400.0 * | 0.9 | * | 268.0 | * | 8376.9 | * | 253.9 | * | -429.7 | * | 499.1 |
| * 8420.0 * | 0.6 | * | 268.0 | * | 8396.9 | * | 253.9 | * | -429.9 | * | 499.3 |
| * 8440.0 * | 0.5 | * | 252.0 | * | 8416.9 | * | 253.9 | * | -430.1 | * | 499.4 |
| * 8460.0 * | 0.7 | * | 268.0 | * | 8436.9 | * | 253.8 | * | -430.3 | * | 499.6 |
| * 8480.0 * | 0.6 | * | 253.0 | * | 8456.9 | * | 253.8 | * | -430.5 | * | 499.7 |
| * 8500.0 * | 0.8 | * | 243.7 | * | 8476.9 | * | 253.7 | * | -430.7 | * | 499.9 |
| * 8520.0 * | 0.7 | * | 229.0 | * | 8496.9 | * | 253.6 | * | -431.0 | * | 500.0 |
| * 8540.0 * | 0.6 | * | 219.0 | * | 8516.9 | * | 253.4 | * | -431.1 | * | 500.1 |
| * 8560.0 * | 0.5 | * | 208.0 | * | 8536.9 | * | 253.2 | * | -431.2 | * | 500.1 |
| * 8580.0 * | 0.5 | * | 180.0 | * | 8556.9 | * | 253.1 | * | -431.3 | * | 500.0 |
| * 8600.0 * | 0.5 | * | 148.0 | * | 8576.9 | * | 252.9 | * | -431.2 | * | 499.9 |
| * 8620.0 * | 0.5 | * | 111.0 | * | 8596.9 | * | 252.8 | * | -431.1 | * | 499.8 |
| * 8640.0 * | 0.6 | * | 91.0  | * | 8616.9 | * | 252.8 | * | -430.9 | * | 499.6 |
| * 8660.0 * | 0.8 | * | 61.0  | * | 8636.9 | * | 252.8 | * | -430.7 | * | 499.4 |
| * 8680.0 * | 0.9 | * | 66.0  | * | 8656.9 | * | 253.0 | * | -430.4 | * | 499.2 |
| * 8700.0 * | 1.1 | * | 58.0  | * | 8676.9 | * | 253.1 | * | -430.1 | * | 499.1 |
| * 8720.0 * | 1.1 | * | 59.0  | * | 8696.9 | * | 253.3 | * | -429.8 | * | 498.9 |
| * 8740.0 * | 1.2 | * | 60.0  | * | 8716.9 | * | 253.5 | * | -429.4 | * | 498.7 |
| * 8760.0 * | 1.2 | * | 54.0  | * | 8736.9 | * | 253.8 | * | -429.1 | * | 498.5 |
| * 8780.0 * | 1.8 | * | 40.0  | * | 8756.9 | * | 254.1 | * | -428.7 | * | 498.4 |
| * 8800.0 * | 1.7 | * | 26.0  | * | 8776.9 | * | 254.6 | * | -428.4 | * | 498.4 |
| * 8820.0 * | 2.0 | * | 24.0  | * | 8796.9 | * | 255.2 | * | -428.1 | * | 498.4 |
| * 8840.0 * | 2.4 | * | 28.0  | * | 8816.8 | * | 255.9 | * | -427.8 | * | 498.5 |
| * 8860.0 * | 2.6 | * | 25.0  | * | 8836.8 | * | 256.7 | * | -427.4 | * | 498.5 |
| * 8880.0 * | 2.7 | * | 30.0  | * | 8856.8 | * | 257.5 | * | -427.0 | * | 498.6 |
| * 8900.0 * | 2.5 | * | 36.0  | * | 8876.8 | * | 258.3 | * | -426.4 | * | 498.5 |
| * 8920.0 * | 2.6 | * | 39.0  | * | 8896.8 | * | 259.0 | * | -425.9 | * | 498.4 |
| * 8940.0 * | 2.3 | * | 45.0  | * | 8916.7 | * | 259.6 | * | -425.3 | * | 498.3 |
| * 8960.0 * | 2.0 | * | 60.0  | * | 8936.7 | * | 260.0 | * | -424.7 | * | 498.0 |
| * 8980.0 * | 1.9 | * | 51.0  | * | 8956.7 | * | 260.4 | * | -424.2 | * | 497.7 |

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REF 5745.

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\* \* \* \* \* TRUE \* CO-ORDINATES \* \* \* \* \*  
\* DEPTH \* DEVIATION \* AZIMUTH \* VERTICAL \* \* \* \* \* COURSE \*  
\* FEET \* DEGREES \* DEGREES \* DEPTH \* + NORTH \* + EAST \* LENGTH \*  
\* \* \* \* \* FEET \* - SOUTH \* - WEST \* FEET \*  
\*\*\*\*\*  
\* 9000.0 \* 0.8 \* 71.0 \* 8976.7 \* 260.6 \* -423.8 \* 497.5 \*  
\* 9020.0 \* 1.2 \* 75.0 \* 8996.7 \* 260.7 \* -423.5 \* 497.3 \*  
\* 9040.0 \* 0.9 \* 85.0 \* 9016.7 \* 260.8 \* -423.1 \* 497.0 \*  
\* 9060.0 \* 1.4 \* 106.0 \* 9036.7 \* 260.8 \* -422.7 \* 496.7 \*  
\* 9066.0 \* 8.5 \* 109.0 \* 9042.7 \* 260.6 \* -422.2 \* 496.2 \*

REF 5745.

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## BOTTOM HOLE LOCATION

**COURSE LENGTH:** 496.2 FEET

**COURSE AZIMUTH: 301.7 DEGREES**

MEASURED DEPTH: 9066.0 FEET

**TRUE VERTICAL DEPTH: 9042.7 FEET**

**DISTANCE NORTH:** 260.6 FEET

**DISTANCE WEST:** 422.2 FEET

## **EXACT RADIUS OF CURVATURE METHOD**

\*\*\*\*\*  
\*\*\*\*\*  
\* CORIBAND \*  
\*\*\*\*\*  
\* SCHLUMBERGER \*  
\*\*\*\*\*

COMPANY FOREST OIL COMPANY

WELL SIGORD UNIT #1

FIELD WILDCAT

COUNTY SEVIER

STATE UTAH

DATE MAY 2, 1979

JOB # [10066,71235]

COMPUTED AT:- ROCKY MOUNTAIN COMPUTING CENTER

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

THIS JOB IS LISTED FROM TOP TO BOTTOM

THIS IS A 01 FOOT LISTING

LISTING IS DISCRIMINATED FOR VSH>50%

LISTING IS DISCRIMINATED FOR PHI<1.9%

PERMEABILITY = (62500(PHI\*\*6))/(SW\*\*2) [10%<SW<50%]

THE FOLLOWING PARAMETERS WERE USED IN THIS COMPUTATION:

POROSITY NORMALIZATION: DENSITY +.00 GM/CC NEUTRON NONE PU:

| START | STOP | RW  | RMF | TEMP | DTSH | PNSH | RBSH | GR1 | GR2 | RSH | A | M    | N    | RHY |
|-------|------|-----|-----|------|------|------|------|-----|-----|-----|---|------|------|-----|
| 8468  | 8350 | .03 | .02 | 160  | 65   | 15   | 2.71 | 35  | 100 | 30  | 1 | 2.00 | 2.00 | .8  |
| 8350  | 7092 | .03 | .03 | 160  | 65   | 15   | 2.71 | 35  | 100 | 30  | 1 | 2.00 | 2.00 | .8  |

\*\*\*\*\*  
\*\*\*\*\*  
\* CORIBAND \*  
\*\*\*\*\*  
\* SCHLUMBERGER \*  
\*\*\*\*\*

COMPANY FOREST OIL COMPANY

WELL SIGORD UNIT #1

FIELD WILDCAT

COUNTY SEVIER

STATE UTAH

DATE MAY 2, 1979

JOB # [10066,71235]

COMPUTED AT:- ROCKY MOUNTAIN COMPUTING CENTER

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

THIS JOB IS LISTED FROM TOP TO BOTTOM

THIS IS A 01 FOOT LISTING

LISTING IS DISCRIMINATED FOR VSH>50%

LISTING IS DISCRIMINATED FOR PHI<1.9%

PERMEABILITY = (62500(PHI\*\*6))/(SW\*\*2) (10%<SW<50%)

THE FOLLOWING PARAMETERS WERE USED IN THIS COMPUTATION:

POROSITY NORMALIZATION: DENSITY +.00 GM/CC NEUTRON NONE PUF

| START | STOP | RW  | RMF | TEMP | DTSH | PNSH | RBSH | GR1 | GR2 | RSH | A | M    | N    | RHY |
|-------|------|-----|-----|------|------|------|------|-----|-----|-----|---|------|------|-----|
| 8468  | 8350 | .03 | .02 | 160  | 65   | 15   | 2.71 | 35  | 100 | 30  | 1 | 2.00 | 2.00 | .8  |
| 8350  | 7092 | .03 | .03 | 160  | 65   | 15   | 2.71 | 35  | 100 | 30  | 1 | 2.00 | 2.00 | .8  |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>% | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME<br>% | CUMULATIVE<br>INTEGRATIONS |       |      |
|---------------|-----------------------------------|---------------|---------------|----------------------------|----------------------|----------------------------|-------|------|
|               |                                   |               |               |                            |                      | POR-FT                     | HC-FT |      |
| 7112.0        | 0.00                              | 100           | 2.9           | 0.0                        | 2.61                 | 43                         | 35.34 | 6.36 |
| 7113.0        | 0.00                              | 89            | 3.5           | 0.0                        | 2.62                 | 34                         | 35.31 | 6.35 |
| 7125.0        | 0.00                              | 100           | 2.6           | 0.0                        | 2.64                 | 48                         | 35.23 | 6.35 |
| 7126.0        | 0.00                              | 99            | 2.6           | 0.0                        | 2.63                 | 41                         | 35.20 | 6.35 |
| 7127.0        | 0.00                              | 100           | 2.3           | 0.0                        | 2.64                 | 44                         | 35.18 | 6.35 |
| 7128.0        | 0.00                              | 78            | 3.2           | 0.0                        | 2.65                 | 47                         | 35.15 | 6.35 |
| 7166.0        | 0.00                              | 99            | 4.5           | 0.0                        | 2.61                 | 48                         | 35.10 | 6.34 |
| 7167.0        | 0.00                              | 99            | 4.5           | 0.0                        | 2.61                 | 35                         | 35.06 | 6.34 |
| 7168.0        | 0.00                              | 100           | 3.4           | 0.0                        | 2.65                 | 33                         | 35.01 | 6.34 |
| 7169.0        | 0.00                              | 100           | 2.7           | 0.0                        | 2.64                 | 36                         | 34.98 | 6.34 |
| 7170.0        | 0.00                              | 100           | 2.4           | 0.0                        | 2.64                 | 39                         | 34.96 | 6.34 |
| 7171.0        | 0.00                              | 100           | 2.8           | 0.0                        | 2.64                 | 43                         | 34.93 | 6.34 |
| 7172.0        | 0.00                              | 100           | 2.1           | 0.0                        | 2.63                 | 49                         | 34.91 | 6.34 |
| 7180.0        | 0.00                              | 100           | 3.5           | 0.0                        | 2.63                 | 45                         | 34.88 | 6.34 |
| 7183.0        | 0.00                              | 100           | 2.6           | 0.0                        | 2.64                 | 49                         | 34.81 | 6.34 |
| 7203.0        | 0.04                              | 100           | 7.3           | 0.0                        | 2.74                 | 45                         | 34.77 | 6.34 |
| 7204.0        | 0.25                              | 100           | 10.0          | 0.0                        | 2.70                 | 32                         | 34.69 | 6.34 |
| 7205.0        | 0.90                              | 100           | 12.4          | 0.0                        | 2.69                 | 22                         | 34.58 | 6.34 |
| 7206.0        | 1.14                              | 98            | 12.9          | 0.0                        | 2.69                 | 16                         | 34.45 | 6.34 |
| 7207.0        | 0.61                              | 99            | 11.6          | 0.0                        | 2.70                 | 13                         | 34.33 | 6.34 |
| 7208.0        | 0.69                              | 98            | 11.8          | 0.0                        | 2.69                 | 13                         | 34.21 | 6.34 |
| 7209.0        | 0.78                              | 98            | 12.1          | 0.0                        | 2.69                 | 14                         | 34.09 | 6.34 |
| 7210.0        | 0.63                              | 99            | 11.7          | 0.0                        | 2.70                 | 13                         | 33.97 | 6.33 |
| 7211.0        | 0.72                              | 99            | 11.9          | 0.0                        | 2.71                 | 15                         | 33.86 | 6.33 |
| 7212.0        | 1.72                              | 93            | 13.8          | 0.0                        | 2.69                 | 9                          | 33.73 | 6.33 |
| 7213.0        | 2.68                              | 86            | 14.8          | 0.0                        | 2.69                 | 7                          | 33.59 | 6.32 |
| 7214.0        | 1.91                              | 93            | 14.0          | 0.0                        | 2.69                 | 8                          | 33.44 | 6.30 |
| 7215.0        | 1.84                              | 95            | 13.9          | 0.0                        | 2.67                 | 13                         | 33.30 | 6.29 |
| 7216.0        | 1.81                              | 94            | 13.9          | 0.0                        | 2.66                 | 13                         | 33.16 | 6.28 |
| 7217.0        | 1.68                              | 94            | 13.7          | 0.0                        | 2.67                 | 12                         | 33.03 | 6.27 |
| 7218.0        | 1.39                              | 97            | 13.3          | 0.0                        | 2.69                 | 13                         | 32.89 | 6.27 |
| 7219.0        | 1.68                              | 95            | 13.7          | 0.0                        | 2.69                 | 16                         | 32.75 | 6.27 |
| 7220.0        | 1.43                              | 99            | 13.4          | 0.0                        | 2.68                 | 17                         | 32.62 | 6.26 |
| 7221.0        | 1.51                              | 99            | 13.5          | 0.0                        | 2.68                 | 17                         | 32.49 | 6.26 |
| 7222.0        | 0.69                              | 100           | 11.8          | 0.0                        | 2.66                 | 24                         | 32.35 | 6.26 |
| 7223.0        | 0.57                              | 100           | 11.5          | 0.0                        | 2.66                 | 25                         | 32.24 | 6.26 |
| 7224.0        | 0.76                              | 100           | 12.0          | 0.0                        | 2.68                 | 23                         | 32.12 | 6.26 |
| 7225.0        | 0.76                              | 100           | 12.0          | 0.0                        | 2.67                 | 23                         | 32.00 | 6.26 |
| 7226.0        | 0.73                              | 100           | 12.0          | 0.0                        | 2.65                 | 23                         | 31.88 | 6.26 |
| 7227.0        | 0.67                              | 100           | 11.8          | 0.0                        | 2.64                 | 24                         | 31.76 | 6.26 |
| 7228.0        | 0.65                              | 100           | 11.7          | 0.0                        | 2.64                 | 24                         | 31.64 | 6.26 |
| 7229.0        | 0.76                              | 100           | 12.0          | 0.0                        | 2.64                 | 23                         | 31.53 | 6.26 |

| DEPTH<br>FEET | PERM.<br>OIL-GAS<br>(INDEX) | TD  | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE<br>INTEGRATIONS |       |      |
|---------------|-----------------------------|-----|---------------|------------------------|----------------------------|-----------------|----------------------------|-------|------|
|               |                             |     |               |                        |                            |                 | POR-FT                     | HC-FT |      |
| 7230.0        | 1.07                        | 100 | 100           | 12.7                   | 0.0                        | 2.64            | 20                         | 31.40 | 6.26 |
| 7231.0        | 1.16                        | 100 | 100           | 12.9                   | 0.4                        | 2.64            | 19                         | 31.27 | 6.26 |
| 7232.0        | 0.38                        | 100 | 100           | 10.7                   | 0.0                        | 2.64            | 29                         | 31.15 | 6.26 |
| 7233.0        | 0.02                        | 100 | 100           | 6.8                    | 0.0                        | 2.63            | 47                         | 31.05 | 6.26 |
| 7235.0        | 0.02                        | 100 | 100           | 6.6                    | 0.0                        | 2.69            | 49                         | 31.02 | 6.26 |
| 7236.0        | 0.09                        | 100 | 100           | 8.5                    | 0.0                        | 2.70            | 39                         | 30.95 | 6.26 |
| 7237.0        | 0.16                        | 100 | 100           | 9.3                    | 0.0                        | 2.68            | 35                         | 30.86 | 6.26 |
| 7238.0        | 0.15                        | 100 | 100           | 9.2                    | 0.0                        | 2.66            | 36                         | 30.77 | 6.26 |
| 7239.0        | 0.20                        | 100 | 100           | 9.6                    | 0.0                        | 2.68            | 34                         | 30.68 | 6.26 |
| 7240.0        | 0.17                        | 100 | 100           | 9.4                    | 0.0                        | 2.68            | 35                         | 30.58 | 6.26 |
| 7241.0        | 0.10                        | 100 | 100           | 8.6                    | 0.0                        | 2.65            | 38                         | 30.49 | 6.26 |
| 7242.0        | 0.09                        | 100 | 100           | 8.4                    | 0.0                        | 2.66            | 39                         | 30.40 | 6.26 |
| 7243.0        | 0.06                        | 100 | 100           | 7.9                    | 0.0                        | 2.66            | 42                         | 30.32 | 6.26 |
| 7244.0        | 0.08                        | 100 | 100           | 8.3                    | 0.0                        | 2.64            | 40                         | 30.24 | 6.26 |
| 7245.0        | 0.09                        | 100 | 100           | 8.4                    | 0.0                        | 2.64            | 40                         | 30.15 | 6.26 |
| 7246.0        | 0.05                        | 100 | 100           | 7.7                    | 0.0                        | 2.66            | 43                         | 30.07 | 6.26 |
| 7247.0        | 0.19                        | 100 | 100           | 9.5                    | 0.0                        | 2.70            | 34                         | 29.99 | 6.26 |
| 7248.0        | 0.30                        | 100 | 100           | 10.3                   | 0.0                        | 2.72            | 29                         | 29.89 | 6.26 |
| 7249.0        | 0.22                        | 100 | 100           | 9.8                    | 0.0                        | 2.70            | 33                         | 29.79 | 6.26 |
| 7250.0        | 0.12                        | 100 | 100           | 8.8                    | 0.0                        | 2.68            | 37                         | 29.70 | 6.26 |
| 7251.0        | 0.20                        | 100 | 100           | 9.6                    | 0.0                        | 2.69            | 34                         | 29.61 | 6.26 |
| 7252.0        | 0.29                        | 100 | 100           | 10.3                   | 0.0                        | 2.67            | 31                         | 29.51 | 6.26 |
| 7253.0        | 0.21                        | 100 | 100           | 9.7                    | 0.3                        | 2.64            | 32                         | 29.41 | 6.26 |
| 7254.0        | 0.19                        | 100 | 100           | 9.6                    | 0.0                        | 2.66            | 34                         | 29.31 | 6.26 |
| 7255.0        | 0.14                        | 100 | 100           | 9.1                    | 0.0                        | 2.64            | 36                         | 29.22 | 6.26 |
| 7256.0        | 0.18                        | 100 | 100           | 9.5                    | 0.0                        | 2.64            | 34                         | 29.12 | 6.26 |
| 7257.0        | 0.26                        | 100 | 100           | 10.1                   | 0.0                        | 2.67            | 32                         | 29.03 | 6.26 |
| 7258.0        | 0.42                        | 100 | 100           | 10.9                   | 0.0                        | 2.69            | 28                         | 28.92 | 6.26 |
| 7259.0        | 0.71                        | 100 | 100           | 11.9                   | 0.0                        | 2.69            | 24                         | 28.81 | 6.26 |
| 7260.0        | 0.60                        | 100 | 100           | 11.6                   | 0.0                        | 2.68            | 25                         | 28.69 | 6.26 |
| 7261.0        | 0.53                        | 100 | 100           | 11.4                   | 0.0                        | 2.67            | 26                         | 28.58 | 6.26 |
| 7262.0        | 0.46                        | 100 | 100           | 11.1                   | 0.0                        | 2.65            | 27                         | 28.46 | 6.26 |
| 7263.0        | 0.46                        | 100 | 100           | 11.1                   | 0.0                        | 2.65            | 27                         | 28.35 | 6.26 |
| 7264.0        | 0.29                        | 100 | 100           | 10.2                   | 0.0                        | 2.65            | 31                         | 28.24 | 6.26 |
| 7265.0        | 0.23                        | 100 | 100           | 9.9                    | 0.0                        | 2.65            | 33                         | 28.14 | 6.26 |
| 7266.0        | 0.47                        | 100 | 100           | 11.1                   | 0.0                        | 2.64            | 27                         | 28.04 | 6.26 |
| 7267.0        | 0.69                        | 100 | 100           | 11.8                   | 0.0                        | 2.64            | 24                         | 27.93 | 6.26 |
| 7268.0        | 0.30                        | 100 | 100           | 10.3                   | 0.0                        | 2.64            | 31                         | 27.81 | 6.26 |
| 7269.0        | 0.10                        | 100 | 100           | 8.6                    | 0.0                        | 2.66            | 39                         | 27.72 | 6.26 |
| 7270.0        | 0.08                        | 100 | 100           | 8.3                    | 0.0                        | 2.67            | 37                         | 27.63 | 6.26 |
| 7271.0        | 0.08                        | 100 | 100           | 8.3                    | 0.0                        | 2.67            | 40                         | 27.55 | 6.26 |
| 7272.0        | 0.10                        | 100 | 100           | 8.5                    | 0.0                        | 2.70            | 36                         | 27.47 | 6.26 |
| 7273.0        | 0.14                        | 100 | 100           | 9.0                    | 0.0                        | 2.68            | 36                         | 27.38 | 6.26 |
| 7274.0        | 0.19                        | 100 | 100           | 9.6                    | 0.0                        | 2.67            | 34                         | 27.29 | 6.26 |
| 7275.0        | 0.12                        | 100 | 100           | 8.9                    | 0.0                        | 2.66            | 37                         | 27.19 | 6.26 |
| 7276.0        | 0.10                        | 100 | 100           | 8.6                    | 0.0                        | 2.65            | 39                         | 27.11 | 6.26 |
| 7277.0        | 0.11                        | 100 | 100           | 8.7                    | 0.0                        | 2.66            | 38                         | 27.02 | 6.26 |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE<br>INTEGRATIONS |        |       |
|---------------|-----------------------------------|---------------|------------------------|----------------------------|-----------------|----------------------------|--------|-------|
|               |                                   |               |                        |                            |                 | %                          | POR-FT | HC-FT |
| 7278.0        | 0.12                              | 100           | 8.9                    | 0.0                        | 2.68            | 37                         | 26.93  | 6.26  |
| 7279.0        | 0.31                              | 100           | 10.4                   | 0.0                        | 2.70            | 30                         | 26.84  | 6.26  |
| 7280.0        | 0.35                              | 100           | 10.6                   | 0.0                        | 2.67            | 29                         | 26.74  | 6.26  |
| 7281.0        | 0.31                              | 100           | 10.4                   | 0.0                        | 2.66            | 30                         | 26.63  | 6.26  |
| 7282.0        | 0.30                              | 100           | 10.3                   | 0.0                        | 2.67            | 31                         | 26.53  | 6.26  |
| 7283.0        | 0.22                              | 100           | 9.8                    | 0.0                        | 2.67            | 33                         | 26.43  | 6.26  |
| 7284.0        | 0.24                              | 100           | 9.9                    | 0.0                        | 2.66            | 32                         | 26.33  | 6.26  |
| 7285.0        | 0.25                              | 100           | 10.0                   | 0.0                        | 2.66            | 32                         | 26.23  | 6.26  |
| 7286.0        | 0.31                              | 100           | 10.3                   | 0.0                        | 2.66            | 30                         | 26.13  | 6.26  |
| 7287.0        | 0.25                              | 100           | 10.0                   | 0.0                        | 2.66            | 32                         | 26.02  | 6.26  |
| 7288.0        | 0.08                              | 100           | 8.3                    | 0.0                        | 2.66            | 40                         | 25.93  | 6.26  |
| 7289.0        | 0.04                              | 100           | 7.3                    | 0.0                        | 2.65            | 45                         | 25.85  | 6.26  |
| 7290.0        | 0.03                              | 100           | 7.2                    | 0.0                        | 2.64            | 45                         | 25.78  | 6.26  |
| 7291.0        | 0.02                              | 100           | 6.7                    | 0.0                        | 2.64            | 48                         | 25.71  | 6.26  |
| 7296.0        | 0.03                              | 100           | 7.0                    | 0.0                        | 2.71            | 46                         | 25.67  | 6.26  |
| 7297.0        | 0.07                              | 100           | 8.1                    | 0.0                        | 2.73            | 41                         | 25.60  | 6.26  |
| 7298.0        | 0.08                              | 100           | 8.3                    | 0.0                        | 2.65            | 40                         | 25.52  | 6.26  |
| 7299.0        | 0.18                              | 100           | 9.5                    | 0.0                        | 2.64            | 34                         | 25.43  | 6.26  |
| 7300.0        | 0.15                              | 100           | 9.1                    | 0.0                        | 2.65            | 36                         | 25.34  | 6.26  |
| 7301.0        | 0.03                              | 100           | 6.9                    | 0.0                        | 2.62            | 47                         | 25.25  | 6.26  |
| 7312.0        | 0.02                              | 100           | 6.4                    | 0.0                        | 2.67            | 49                         | 25.22  | 6.26  |
| 7313.0        | 0.02                              | 100           | 6.6                    | 0.0                        | 2.65            | 48                         | 25.15  | 6.26  |
| 7315.0        | 0.02                              | 100           | 6.6                    | 0.0                        | 2.65            | 48                         | 25.09  | 6.26  |
| 7316.0        | 0.04                              | 100           | 7.3                    | 0.0                        | 2.64            | 45                         | 25.02  | 6.26  |
| 7317.0        | 0.05                              | 100           | 7.7                    | 0.0                        | 2.64            | 43                         | 24.94  | 6.26  |
| 7318.0        | 0.05                              | 100           | 7.7                    | 0.0                        | 2.64            | 43                         | 24.87  | 6.26  |
| 7319.0        | 0.06                              | 100           | 7.8                    | 0.0                        | 2.65            | 42                         | 24.79  | 6.26  |
| 7320.0        | 0.05                              | 100           | 7.7                    | 0.0                        | 2.64            | 43                         | 24.71  | 6.26  |
| 7321.0        | 0.06                              | 100           | 7.8                    | 0.0                        | 2.66            | 42                         | 24.63  | 6.26  |
| 7322.0        | 0.03                              | 100           | 6.9                    | 0.0                        | 2.65            | 47                         | 24.56  | 6.26  |
| 7323.0        | 0.07                              | 100           | 8.2                    | 0.0                        | 2.64            | 40                         | 24.49  | 6.26  |
| 7324.0        | 0.20                              | 100           | 9.7                    | 0.0                        | 2.64            | 33                         | 24.40  | 6.26  |
| 7325.0        | 0.18                              | 100           | 9.5                    | 0.0                        | 2.64            | 34                         | 24.30  | 6.26  |
| 7326.0        | 0.10                              | 100           | 8.6                    | 0.0                        | 2.65            | 38                         | 24.21  | 6.26  |
| 7327.0        | 0.16                              | 100           | 9.3                    | 0.0                        | 2.65            | 35                         | 24.12  | 6.26  |
| 7328.0        | 0.11                              | 100           | 8.7                    | 0.0                        | 2.60            | 38                         | 24.03  | 6.26  |
| 7329.0        | 0.04                              | 100           | 7.4                    | 0.0                        | 2.62            | 44                         | 23.95  | 6.26  |
| 7330.0        | 0.11                              | 100           | 8.8                    | 0.0                        | 2.64            | 38                         | 23.87  | 6.26  |
| 7331.0        | 0.07                              | 100           | 8.0                    | 0.0                        | 2.64            | 41                         | 23.78  | 6.26  |
| 7332.0        | 0.03                              | 100           | 7.0                    | 0.0                        | 2.63            | 46                         | 23.71  | 6.26  |
| 7333.0        | 0.04                              | 100           | 7.3                    | 0.0                        | 2.68            | 45                         | 23.64  | 6.26  |
| 7334.0        | 0.08                              | 100           | 8.2                    | 0.0                        | 2.69            | 39                         | 23.56  | 6.26  |
| 7335.0        | 0.06                              | 100           | 7.8                    | 0.0                        | 2.65            | 41                         | 23.48  | 6.26  |
| 7336.0        | 0.05                              | 100           | 7.6                    | 0.0                        | 2.63            | 42                         | 23.40  | 6.26  |
| 7388.0        | 0.14                              | 100           | 9.1                    | 0.0                        | 2.68            | 36                         | 23.30  | 6.26  |

| DEPTH<br>FEET | PERM.<br>OIL-GAS<br>(INDEX) | TD  | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE<br>INTEGRATIONS |       |
|---------------|-----------------------------|-----|---------------|------------------------|----------------------------|-----------------|----------------------------|-------|
|               |                             |     |               |                        |                            |                 | PDR-FT                     | HC-FT |
| 7389.0        | 0.31                        | 100 | 10.3          | 0.0                    | 2.66                       | 30              | 23.20                      | 6.26  |
| 7390.0        | 0.33                        | 100 | 10.5          | 0.0                    | 2.67                       | 30              | 23.10                      | 6.26  |
| 7391.0        | 0.33                        | 100 | 10.5          | 0.0                    | 2.66                       | 30              | 22.99                      | 6.26  |
| 7392.0        | 0.25                        | 100 | 10.0          | 0.0                    | 2.64                       | 32              | 22.89                      | 6.26  |
| 7393.0        | 0.17                        | 100 | 9.4           | 0.0                    | 2.65                       | 35              | 22.79                      | 6.26  |
| 7394.0        | 0.30                        | 100 | 10.3          | 0.0                    | 2.67                       | 30              | 22.70                      | 6.26  |
| 7395.0        | 0.41                        | 99  | 10.8          | 0.0                    | 2.68                       | 24              | 22.59                      | 6.26  |
| 7396.0        | 0.39                        | 99  | 10.8          | 0.0                    | 2.68                       | 23              | 22.49                      | 6.26  |
| 7397.0        | 0.46                        | 99  | 11.1          | 0.0                    | 2.69                       | 22              | 22.38                      | 6.26  |
| 7398.0        | 0.63                        | 99  | 11.7          | 0.0                    | 2.68                       | 24              | 22.27                      | 6.26  |
| 7399.0        | 0.52                        | 100 | 11.3          | 0.0                    | 2.69                       | 25              | 22.15                      | 6.26  |
| 7400.0        | 0.35                        | 100 | 10.6          | 0.0                    | 2.72                       | 20              | 22.04                      | 6.26  |
| 7401.0        | 0.17                        | 100 | 9.4           | 0.0                    | 2.70                       | 21              | 21.94                      | 6.26  |
| 7402.0        | 0.28                        | 100 | 10.2          | 0.0                    | 2.67                       | 25              | 21.84                      | 6.26  |
| 7403.0        | 0.35                        | 100 | 10.6          | 0.0                    | 2.67                       | 29              | 21.74                      | 6.26  |
| 7404.0        | 0.23                        | 100 | 9.8           | 0.0                    | 2.66                       | 33              | 21.63                      | 6.26  |
| 7405.0        | 0.24                        | 100 | 9.9           | 0.0                    | 2.64                       | 32              | 21.53                      | 6.26  |
| 7406.0        | 0.31                        | 100 | 10.4          | 0.0                    | 2.64                       | 30              | 21.43                      | 6.26  |
| 7407.0        | 0.24                        | 100 | 9.9           | 0.0                    | 2.66                       | 32              | 21.33                      | 6.26  |
| 7408.0        | 0.21                        | 100 | 9.7           | 0.0                    | 2.67                       | 33              | 21.23                      | 6.26  |
| 7409.0        | 0.19                        | 100 | 9.6           | 0.0                    | 2.66                       | 34              | 21.13                      | 6.26  |
| 7410.0        | 0.15                        | 100 | 9.1           | 0.0                    | 2.64                       | 36              | 21.04                      | 6.26  |
| 7411.0        | 0.16                        | 100 | 9.3           | 0.0                    | 2.65                       | 35              | 20.95                      | 6.26  |
| 7412.0        | 0.10                        | 100 | 8.7           | 0.0                    | 2.66                       | 38              | 20.86                      | 6.26  |
| 7413.0        | 0.09                        | 100 | 8.4           | 0.0                    | 2.69                       | 40              | 20.77                      | 6.26  |
| 7414.0        | 0.10                        | 100 | 8.6           | 0.0                    | 2.69                       | 38              | 20.69                      | 6.26  |
| 7415.0        | 0.20                        | 100 | 9.6           | 0.0                    | 2.68                       | 34              | 20.60                      | 6.26  |
| 7416.0        | 0.17                        | 100 | 9.4           | 0.4                    | 2.67                       | 32              | 20.50                      | 6.26  |
| 7417.0        | 0.19                        | 100 | 9.6           | 0.0                    | 2.65                       | 34              | 20.41                      | 6.26  |
| 7418.0        | 0.14                        | 100 | 9.1           | 0.0                    | 2.66                       | 36              | 20.31                      | 6.26  |
| 7419.0        | 0.13                        | 100 | 9.0           | 0.0                    | 2.64                       | 36              | 20.22                      | 6.26  |
| 7420.0        | 0.12                        | 100 | 8.8           | 0.0                    | 2.64                       | 37              | 20.13                      | 6.26  |
| 7421.0        | 0.15                        | 100 | 9.2           | 0.0                    | 2.67                       | 36              | 20.04                      | 6.26  |
| 7422.0        | 0.09                        | 100 | 8.5           | 0.0                    | 2.69                       | 39              | 19.95                      | 6.26  |
| 7423.0        | 0.03                        | 100 | 6.9           | 0.0                    | 2.69                       | 46              | 19.87                      | 6.26  |
| 7424.0        | 0.06                        | 100 | 8.0           | 0.0                    | 2.68                       | 41              | 19.80                      | 6.26  |
| 7425.0        | 0.10                        | 100 | 8.5           | 0.0                    | 2.68                       | 39              | 19.72                      | 6.26  |
| 7426.0        | 0.06                        | 100 | 7.8           | 0.0                    | 2.64                       | 42              | 19.63                      | 6.26  |
| 7427.0        | 0.05                        | 100 | 7.7           | 0.0                    | 2.64                       | 43              | 19.56                      | 6.26  |
| 7428.0        | 0.02                        | 100 | 6.6           | 0.0                    | 2.65                       | 48              | 19.48                      | 6.26  |
| 7431.0        | 0.05                        | 100 | 7.7           | 0.0                    | 2.70                       | 43              | 19.38                      | 6.26  |
| 7432.0        | 0.05                        | 100 | 7.6           | 0.0                    | 2.66                       | 43              | 19.30                      | 6.26  |
| 7433.0        | 0.09                        | 100 | 8.4           | 0.0                    | 2.68                       | 39              | 19.23                      | 6.26  |
| 7434.0        | 0.14                        | 100 | 9.1           | 0.0                    | 2.68                       | 36              | 19.14                      | 6.26  |
| 7435.0        | 0.12                        | 100 | 8.9           | 0.0                    | 2.68                       | 37              | 19.05                      | 6.26  |
| 7436.0        | 0.06                        | 100 | 7.8           | 0.0                    | 2.65                       | 42              | 18.96                      | 6.26  |
| 7437.0        | 0.07                        | 100 | 8.1           | 0.0                    | 2.64                       | 41              | 18.89                      | 6.26  |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>% | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME<br>% | CUMULATIVE<br>INTEGRATIONS |       |  |
|---------------|-----------------------------------|---------------|---------------|----------------------------|----------------------|----------------------------|-------|--|
|               |                                   |               |               |                            |                      | POR-FT                     | HC-FT |  |
| 7438.0        | 0.14                              | 100           | 9.1           | 2.64                       | 36                   | 18.80                      | 6.26  |  |
| 7439.0        | 0.17                              | 100           | 9.4           | 2.63                       | 35                   | 18.71                      | 6.26  |  |
| 7440.0        | 0.09                              | 100           | 8.5           | 2.66                       | 39                   | 18.62                      | 6.26  |  |
| 7441.0        | 0.09                              | 100           | 8.4           | 2.67                       | 40                   | 18.53                      | 6.26  |  |
| 7442.0        | 0.06                              | 100           | 7.9           | 2.63                       | 42                   | 18.45                      | 6.26  |  |
| 7443.0        | 0.05                              | 100           | 7.6           | 2.64                       | 43                   | 18.37                      | 6.26  |  |
| 7444.0        | 0.05                              | 100           | 7.6           | 2.67                       | 43                   | 18.29                      | 6.26  |  |
| 7445.0        | 0.09                              | 100           | 8.4           | 2.69                       | 39                   | 18.22                      | 6.26  |  |
| 7446.0        | 0.21                              | 100           | 9.7           | 2.69                       | 33                   | 18.13                      | 6.26  |  |
| 7447.0        | 0.25                              | 100           | 10.0          | 2.65                       | 32                   | 18.03                      | 6.26  |  |
| 7448.0        | 0.81                              | 100           | 12.2          | 2.63                       | 22                   | 17.93                      | 6.26  |  |
| 7449.0        | 0.31                              | 100           | 10.4          | 2.64                       | 24                   | 17.80                      | 6.26  |  |
| 7450.0        | 0.14                              | 100           | 9.1           | 2.64                       | 36                   | 17.71                      | 6.26  |  |
| 7451.0        | 0.07                              | 100           | 8.0           | 2.67                       | 41                   | 17.62                      | 6.26  |  |
| 7452.0        | 0.07                              | 100           | 8.2           | 2.68                       | 41                   | 17.54                      | 6.26  |  |
| 7453.0        | 0.06                              | 100           | 8.0           | 2.66                       | 41                   | 17.46                      | 6.26  |  |
| 7454.0        | 0.07                              | 100           | 8.1           | 2.63                       | 41                   | 17.38                      | 6.26  |  |
| 7455.0        | 0.07                              | 100           | 8.1           | 2.66                       | 41                   | 17.30                      | 6.26  |  |
| 7456.0        | 0.05                              | 100           | 7.7           | 2.68                       | 43                   | 17.22                      | 6.26  |  |
| 7457.0        | 0.06                              | 100           | 7.8           | 2.70                       | 42                   | 17.14                      | 6.26  |  |
| 7458.0        | 0.10                              | 100           | 8.6           | 2.70                       | 38                   | 17.06                      | 6.26  |  |
| 7459.0        | 0.26                              | 100           | 10.1          | 2.67                       | 32                   | 16.97                      | 6.26  |  |
| 7460.0        | 0.18                              | 100           | 9.5           | 2.65                       | 34                   | 16.87                      | 6.26  |  |
| 7461.0        | 0.18                              | 100           | 9.5           | 2.66                       | 34                   | 16.78                      | 6.26  |  |
| 7462.0        | 0.12                              | 100           | 8.8           | 2.65                       | 37                   | 16.68                      | 6.26  |  |
| 7463.0        | 0.05                              | 100           | 7.6           | 2.65                       | 43                   | 16.60                      | 6.26  |  |
| 7464.0        | 0.03                              | 100           | 7.2           | 2.66                       | 45                   | 16.53                      | 6.26  |  |
| 7465.0        | 0.07                              | 100           | 8.1           | 2.68                       | 41                   | 16.45                      | 6.26  |  |
| 7466.0        | 0.07                              | 100           | 8.0           | 2.70                       | 41                   | 16.37                      | 6.26  |  |
| 7467.0        | 0.04                              | 100           | 7.4           | 2.69                       | 44                   | 16.29                      | 6.26  |  |
| 7468.0        | 0.02                              | 100           | 6.5           | 2.65                       | 49                   | 16.19                      | 6.26  |  |
| 7469.0        | 0.02                              | 100           | 6.5           | 2.65                       | 49                   | 16.12                      | 6.26  |  |
| 7470.0        | 0.02                              | 100           | 6.5           | 2.65                       | 49                   | 16.12                      | 6.26  |  |
| 7477.0        | 0.04                              | 100           | 7.4           | 2.68                       | 44                   | 16.02                      | 6.26  |  |
| 7478.0        | 0.07                              | 100           | 8.2           | 2.66                       | 41                   | 15.95                      | 6.26  |  |
| 7479.0        | 0.08                              | 100           | 8.4           | 2.65                       | 40                   | 15.87                      | 6.26  |  |
| 7480.0        | 0.14                              | 100           | 9.1           | 2.67                       | 36                   | 15.78                      | 6.26  |  |
| 7481.0        | 0.15                              | 100           | 9.2           | 2.69                       | 36                   | 15.69                      | 6.26  |  |
| 7482.0        | 0.10                              | 100           | 8.6           | 2.67                       | 38                   | 15.60                      | 6.26  |  |
| 7483.0        | 0.13                              | 100           | 9.0           | 2.67                       | 37                   | 15.51                      | 6.26  |  |
| 7484.0        | 0.09                              | 100           | 8.4           | 2.64                       | 39                   | 15.42                      | 6.26  |  |
| 7485.0        | 0.04                              | 100           | 7.4           | 2.64                       | 44                   | 15.34                      | 6.26  |  |
| 7491.0        | 0.02                              | 100           | 6.5           | 2.64                       | 49                   | 15.27                      | 6.26  |  |
| 7493.0        | 0.03                              | 100           | 7.2           | 2.69                       | 45                   | 15.20                      | 6.26  |  |
| 7494.0        | 0.05                              | 100           | 7.6           | 2.70                       | 43                   | 15.13                      | 6.26  |  |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE<br>INTEGRATIONS |       |      |
|---------------|-----------------------------------|---------------|------------------------|----------------------------|-----------------|----------------------------|-------|------|
|               |                                   |               |                        |                            |                 | POR-FT                     | HC-FT |      |
| 7495.0        | 0.05                              | 100           | 7.7                    | 0.0                        | 2.70            | 43                         | 15.06 | 6.26 |
| 7496.0        | 0.08                              | 100           | 8.2                    | 0.0                        | 2.72            | 40                         | 14.98 | 6.26 |
| 7497.0        | 0.13                              | 100           | 9.0                    | 0.0                        | 2.71            | 37                         | 14.89 | 6.26 |
| 7498.0        | 0.17                              | 100           | 9.4                    | 0.0                        | 2.70            | 35                         | 14.80 | 6.26 |
| 7499.0        | 0.12                              | 100           | 8.8                    | 0.0                        | 2.65            | 37                         | 14.71 | 6.26 |
| 7500.0        | 0.21                              | 100           | 9.7                    | 0.0                        | 2.64            | 33                         | 14.62 | 6.26 |
| 7501.0        | 0.31                              | 100           | 10.4                   | 0.0                        | 2.65            | 30                         | 14.52 | 6.26 |
| 7502.0        | 0.36                              | 100           | 10.6                   | 0.0                        | 2.64            | 29                         | 14.41 | 6.26 |
| 7503.0        | 0.21                              | 100           | 9.7                    | 0.0                        | 2.64            | 33                         | 14.31 | 6.26 |
| 7504.0        | 0.08                              | 100           | 8.3                    | 0.0                        | 2.65            | 40                         | 14.22 | 6.26 |
| 7505.0        | 0.06                              | 100           | 7.8                    | 0.0                        | 2.64            | 42                         | 14.14 | 6.26 |
| 7506.0        | 0.06                              | 100           | 7.8                    | 0.0                        | 2.66            | 42                         | 14.06 | 6.26 |
| 7507.0        | 0.08                              | 100           | 8.3                    | 0.0                        | 2.67            | 40                         | 13.98 | 6.26 |
| 7508.0        | 0.08                              | 100           | 8.3                    | 0.0                        | 2.67            | 40                         | 13.89 | 6.26 |
| 7577.0        | 0.00                              | 100           | 4.4                    | 0.0                        | 2.64            | 48                         | 13.80 | 6.26 |
| 7578.0        | 0.00                              | 100           | 3.3                    | 0.0                        | 2.64            | 49                         | 13.76 | 6.26 |
| 7581.0        | 0.00                              | 100           | 3.9                    | 0.0                        | 2.68            | 49                         | 13.75 | 6.26 |
| 7607.0        | 0.00                              | 100           | 2.1                    | 0.0                        | 2.64            | 46                         | 13.71 | 6.26 |
| 7608.0        | 0.00                              | 100           | 2.0                    | 0.0                        | 2.64            | 47                         | 13.69 | 6.26 |
| 7611.0        | 0.00                              | 100           | 3.0                    | 0.0                        | 2.64            | 45                         | 13.65 | 6.26 |
| 7612.0        | 0.00                              | 100           | 3.8                    | 0.0                        | 2.64            | 45                         | 13.62 | 6.26 |
| 7613.0        | 0.00                              | 100           | 4.6                    | 0.0                        | 2.64            | 49                         | 13.58 | 6.26 |
| 7633.0        | 0.02                              | 100           | 6.5                    | 0.0                        | 2.61            | 49                         | 13.55 | 6.26 |
| 7634.0        | 0.05                              | 100           | 7.6                    | 0.0                        | 2.66            | 43                         | 13.48 | 6.26 |
| 7635.0        | 0.05                              | 100           | 7.7                    | 0.0                        | 2.65            | 43                         | 13.41 | 6.26 |
| 7636.0        | 0.10                              | 99            | 8.6                    | 0.0                        | 2.64            | 38                         | 13.33 | 6.26 |
| 7637.0        | 0.04                              | 100           | 7.4                    | 0.0                        | 2.63            | 44                         | 13.24 | 6.26 |
| 7661.0        | 0.03                              | 100           | 6.8                    | 0.0                        | 2.65            | 47                         | 13.17 | 6.26 |
| 7662.0        | 0.05                              | 100           | 7.6                    | 0.0                        | 2.64            | 43                         | 13.10 | 6.26 |
| 7663.0        | 0.04                              | 100           | 7.3                    | 0.0                        | 2.65            | 45                         | 13.03 | 6.26 |
| 7675.0        | 0.02                              | 100           | 6.8                    | 0.0                        | 2.64            | 47                         | 12.99 | 6.26 |
| 7712.0        | 0.05                              | 100           | 7.6                    | 0.0                        | 2.61            | 43                         | 12.92 | 6.26 |
| 7743.0        | 0.02                              | 100           | 6.4                    | 0.0                        | 2.62            | 49                         | 12.88 | 6.26 |
| 7744.0        | 0.19                              | 99            | 9.5                    | 0.0                        | 2.63            | 34                         | 12.80 | 6.26 |
| 7745.0        | 0.08                              | 99            | 8.3                    | 0.0                        | 2.64            | 40                         | 12.71 | 6.26 |
| 7776.0        | 0.02                              | 100           | 6.4                    | 0.0                        | 2.64            | 49                         | 12.63 | 6.26 |
| 7777.0        | 0.01                              | 100           | 5.7                    | 0.0                        | 2.64            | 41                         | 12.57 | 6.26 |
| 7778.0        | 0.00                              | 100           | 3.8                    | 0.0                        | 2.64            | 42                         | 12.52 | 6.26 |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE<br>INTEGRATIONS |       |                 |
|---------------|-----------------------------------|---------------|------------------------|----------------------------|-----------------|----------------------------|-------|-----------------|
|               |                                   |               |                        |                            |                 | %                          | %     | POR-FT<br>HC-FT |
| 7779.0        | 0.00                              | 100           | 2.3                    | 0.0                        | 2.65            | 48                         | 12.48 | 6.26            |
| 7810.0        | 0.00                              | 100           | 4.3                    | 0.0                        | 2.64            | 46                         | 12.41 | 6.26            |
| 7982.0        | 0.02                              | 100           | 6.5                    | 0.0                        | 2.65            | 49                         | 12.33 | 6.26            |
| 7985.0        | 0.01                              | 100           | 5.6                    | 0.0                        | 2.65            | 49                         | 12.27 | 6.26            |
| 7986.0        | 0.01                              | 100           | 5.7                    | 0.0                        | 2.64            | 48                         | 12.21 | 6.26            |
| 7991.0        | 0.04                              | 100           | 7.2                    | 0.0                        | 2.64            | 42                         | 12.13 | 6.26            |
| 8029.0        | 0.02                              | 100           | 6.7                    | 0.0                        | 2.63            | 48                         | 12.02 | 6.26            |
| 8363.0        | 0.03                              | 95            | 7.0                    | 0.0                        | 2.62            | 46                         | 11.66 | 6.26            |
| 8364.0        | 0.06                              | 86            | 7.8                    | 0.0                        | 2.61            | 42                         | 11.59 | 6.25            |
| 8365.0        | 0.02                              | 99            | 6.6                    | 0.0                        | 2.60            | 48                         | 11.52 | 6.24            |
| 8367.0        | 0.02                              | 97            | 6.7                    | 0.0                        | 2.61            | 48                         | 11.48 | 6.24            |
| 8368.0        | 0.15                              | 59            | 9.2                    | 0.0                        | 2.62            | 36                         | 11.41 | 6.24            |
| 8369.0        | 0.70                              | 40            | 11.1                   | 0.0                        | 2.70            | 27                         | 11.31 | 6.19            |
| 8370.0        | 1.98                              | 35            | 12.6                   | 0.0                        | 2.74            | 21                         | 11.20 | 6.12            |
| 8371.0        | 0.28                              | 42            | 9.6                    | 0.0                        | 2.81            | 12                         | 11.08 | 6.04            |
| 8372.0        | 0.18                              | 40            | 8.8                    | 0.0                        | 2.80            | 15                         | 10.99 | 5.99            |
| 8373.0        | 0.23                              | 41            | 9.2                    | 0.0                        | 2.78            | 21                         | 10.90 | 5.94            |
| 8374.0        | 0.65                              | 41            | 11.1                   | 0.0                        | 2.76            | 25                         | 10.80 | 5.88            |
| 8375.0        | 0.43                              | 43            | 10.5                   | 0.0                        | 2.72            | 30                         | 10.69 | 5.82            |
| 8376.0        | 0.26                              | 44            | 9.7                    | 0.0                        | 2.71            | 33                         | 10.59 | 5.76            |
| 8377.0        | 0.40                              | 46            | 10.5                   | 0.0                        | 2.75            | 30                         | 10.49 | 5.71            |
| 8378.0        | 1.44                              | 40            | 12.5                   | 0.0                        | 2.72            | 21                         | 10.38 | 5.65            |
| 8379.0        | 1.33                              | 40            | 12.3                   | 0.0                        | 2.73            | 16                         | 10.25 | 5.57            |
| 8380.0        | 0.60                              | 46            | 11.3                   | 0.0                        | 2.75            | 19                         | 10.13 | 5.50            |
| 8381.0        | 0.69                              | 42            | 11.2                   | 0.0                        | 2.76            | 20                         | 10.02 | 5.44            |
| 8382.0        | 0.98                              | 39            | 11.6                   | 0.0                        | 2.75            | 22                         | 9.91  | 5.38            |
| 8383.0        | 1.07                              | 41            | 12.0                   | 0.0                        | 2.74            | 23                         | 9.79  | 5.30            |
| 8384.0        | 0.54                              | 43            | 10.9                   | 0.0                        | 2.75            | 28                         | 9.67  | 5.24            |
| 8385.0        | 1.65                              | 38            | 12.5                   | 0.0                        | 2.73            | 21                         | 9.57  | 5.17            |
| 8386.0        | 2.28                              | 37            | 13.1                   | 0.0                        | 2.76            | 13                         | 9.44  | 5.09            |
| 8387.0        | 1.46                              | 38            | 12.3                   | 0.0                        | 2.73            | 12                         | 9.31  | 5.01            |
| 8388.0        | 1.45                              | 36            | 12.0                   | 0.0                        | 2.68            | 15                         | 9.19  | 4.94            |
| 8389.0        | 1.96                              | 33            | 12.3                   | 0.0                        | 2.64            | 14                         | 9.07  | 4.86            |
| 8390.0        | 2.14                              | 32            | 12.4                   | 0.0                        | 2.63            | 16                         | 8.94  | 4.78            |
| 8391.0        | 3.21                              | 32            | 13.2                   | 0.0                        | 2.61            | 16                         | 8.82  | 4.70            |
| 8392.0        | 2.84                              | 32            | 13.0                   | 0.0                        | 2.62            | 18                         | 8.68  | 4.60            |
| 8393.0        | 0.98                              | 36            | 11.3                   | 0.1                        | 2.66            | 23                         | 8.56  | 4.52            |
| 8394.0        | 2.11                              | 34            | 12.6                   | 0.7                        | 2.69            | 21                         | 8.45  | 4.45            |
| 8395.0        | 1.80                              | 37            | 12.6                   | 0.0                        | 2.73            | 21                         | 8.32  | 4.37            |
| 8396.0        | 2.79                              | 38            | 13.7                   | 0.0                        | 2.75            | 16                         | 8.19  | 4.29            |
| 8397.0        | 2.93                              | 39            | 14.0                   | 0.0                        | 2.74            | 15                         | 8.06  | 4.21            |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME<br>% | CUMULATIVE<br>INTEGRATIONS |       |      |
|---------------|-----------------------------------|---------------|------------------------|----------------------------|----------------------|----------------------------|-------|------|
|               |                                   |               |                        |                            |                      | POR-FT                     | HC-FT |      |
| 8398.0        | 1.71                              | 44            | 13.3                   | 0.0                        | 2.76                 | 18                         | 7.92  | 4.13 |
| 8399.0        | 0.98                              | 46            | 12.3                   | 0.0                        | 2.80                 | 20                         | 7.79  | 4.05 |
| 8400.0        | 1.12                              | 43            | 12.2                   | 0.0                        | 2.77                 | 21                         | 7.67  | 3.99 |
| 8401.0        | 0.96                              | 43            | 11.9                   | 0.0                        | 2.76                 | 17                         | 7.55  | 3.92 |
| 8402.0        | 1.87                              | 39            | 13.0                   | 0.0                        | 2.76                 | 18                         | 7.43  | 3.85 |
| 8403.0        | 1.07                              | 44            | 12.3                   | 0.0                        | 2.73                 | 22                         | 7.30  | 3.78 |
| 8404.0        | 1.00                              | 45            | 12.2                   | 0.0                        | 2.73                 | 22                         | 7.18  | 3.71 |
| 8405.0        | 0.96                              | 44            | 12.0                   | 0.0                        | 2.77                 | 21                         | 7.05  | 3.64 |
| 8406.0        | 0.49                              | 49            | 11.1                   | 0.0                        | 2.80                 | 21                         | 6.93  | 3.58 |
| 8407.0        | 0.42                              | 52            | 10.9                   | 0.0                        | 2.80                 | 21                         | 6.82  | 3.52 |
| 8408.0        | 0.39                              | 55            | 10.7                   | 0.0                        | 2.78                 | 21                         | 6.72  | 3.47 |
| 8409.0        | 0.51                              | 53            | 11.3                   | 0.0                        | 2.76                 | 22                         | 6.61  | 3.42 |
| 8410.0        | 0.84                              | 47            | 12.1                   | 0.0                        | 2.76                 | 23                         | 6.49  | 3.37 |
| 8411.0        | 0.62                              | 48            | 11.5                   | 0.0                        | 2.77                 | 25                         | 6.37  | 3.31 |
| 8412.0        | 0.52                              | 51            | 11.3                   | 0.0                        | 2.79                 | 24                         | 6.26  | 3.25 |
| 8413.0        | 1.01                              | 46            | 12.4                   | 0.0                        | 2.79                 | 22                         | 6.14  | 3.19 |
| 8414.0        | 0.75                              | 48            | 11.9                   | 0.0                        | 2.77                 | 24                         | 6.02  | 3.13 |
| 8415.0        | 0.74                              | 48            | 11.8                   | 0.0                        | 2.78                 | 24                         | 5.90  | 3.06 |
| 8416.0        | 0.41                              | 51            | 10.8                   | 0.0                        | 2.78                 | 25                         | 5.79  | 3.01 |
| 8417.0        | 0.45                              | 51            | 11.0                   | 0.0                        | 2.79                 | 21                         | 5.68  | 2.95 |
| 8418.0        | 1.25                              | 45            | 12.7                   | 0.0                        | 2.76                 | 20                         | 5.57  | 2.90 |
| 8419.0        | 1.52                              | 43            | 12.9                   | 0.0                        | 2.73                 | 19                         | 5.44  | 2.83 |
| 8420.0        | 1.58                              | 42            | 12.9                   | 0.0                        | 2.73                 | 19                         | 5.31  | 2.75 |
| 8421.0        | 1.04                              | 44            | 12.2                   | 0.0                        | 2.72                 | 22                         | 5.18  | 2.68 |
| 8422.0        | 1.15                              | 43            | 12.3                   | 0.0                        | 2.73                 | 22                         | 5.06  | 2.61 |
| 8423.0        | 2.80                              | 38            | 13.7                   | 0.0                        | 2.67                 | 16                         | 4.93  | 2.54 |
| 8424.0        | 2.36                              | 38            | 13.3                   | 0.0                        | 2.63                 | 18                         | 4.80  | 2.46 |
| 8425.0        | 0.94                              | 40            | 11.6                   | 0.0                        | 2.61                 | 25                         | 4.67  | 2.38 |
| 8426.0        | 0.46                              | 44            | 10.6                   | 0.0                        | 2.63                 | 29                         | 4.55  | 2.31 |
| 8427.0        | 0.40                              | 47            | 10.6                   | 0.0                        | 2.79                 | 29                         | 4.45  | 2.25 |
| 8428.0        | 0.34                              | 48            | 10.5                   | 0.0                        | 2.84                 | 30                         | 4.34  | 2.20 |
| 8429.0        | 0.22                              | 50            | 9.8                    | 0.0                        | 2.82                 | 31                         | 4.24  | 2.15 |
| 8430.0        | 0.24                              | 49            | 9.9                    | 0.0                        | 2.80                 | 29                         | 4.14  | 2.10 |
| 8431.0        | 0.37                              | 45            | 10.4                   | 0.0                        | 2.80                 | 30                         | 4.04  | 2.05 |
| 8432.0        | 0.55                              | 44            | 11.0                   | 0.0                        | 2.80                 | 28                         | 3.94  | 1.99 |
| 8433.0        | 0.45                              | 48            | 10.9                   | 0.0                        | 2.78                 | 27                         | 3.82  | 1.93 |
| 8434.0        | 0.35                              | 51            | 10.6                   | 0.0                        | 2.78                 | 24                         | 3.72  | 1.87 |
| 8435.0        | 0.77                              | 47            | 11.9                   | 0.0                        | 2.74                 | 22                         | 3.61  | 1.82 |
| 8436.0        | 1.10                              | 45            | 12.4                   | 0.0                        | 2.70                 | 19                         | 3.49  | 1.76 |
| 8437.0        | 0.50                              | 45            | 10.9                   | 0.0                        | 2.71                 | 20                         | 3.37  | 1.69 |
| 8438.0        | 0.60                              | 42            | 11.0                   | 0.0                        | 2.70                 | 23                         | 3.26  | 1.63 |
| 8439.0        | 1.12                              | 39            | 11.9                   | 0.0                        | 2.67                 | 24                         | 3.15  | 1.56 |
| 8440.0        | 0.80                              | 42            | 11.5                   | 0.0                        | 2.66                 | 25                         | 3.03  | 1.49 |
| 8441.0        | 0.69                              | 45            | 11.5                   | 0.0                        | 2.71                 | 25                         | 2.91  | 1.43 |
| 8442.0        | 0.82                              | 44            | 11.7                   | 0.0                        | 2.77                 | 24                         | 2.80  | 1.36 |
| 8443.0        | 0.31                              | 50            | 10.3                   | 0.0                        | 2.76                 | 30                         | 2.68  | 1.30 |
| 8444.0        | 0.17                              | 59            | 9.4                    | 0.1                        | 2.76                 | 35                         | 2.58  | 1.25 |
| 8445.0        | 0.13                              | 64            | 9.0                    | 0.0                        | 2.77                 | 37                         | 2.49  | 1.22 |

| DEPTH<br>FEET | PERM.<br>TO<br>OIL-GAS<br>(INDEX) | WATER<br>SAT. | POROSITY<br>TOTAL SEC. | MATRIX<br>DENSITY<br>GM/CC | SHALE<br>VOLUME | CUMULATIVE |       |      |
|---------------|-----------------------------------|---------------|------------------------|----------------------------|-----------------|------------|-------|------|
|               |                                   |               |                        |                            |                 | POR-FT     | HC-FT |      |
| 8446.0        | 0.22                              | 59            | 9.8                    | 0.0                        | 2.81            | 33         | 2.40  | 1.18 |
| 8447.0        | 0.27                              | 58            | 10.1                   | 0.0                        | 2.83            | 31         | 2.30  | 1.14 |
| 8448.0        | 0.30                              | 56            | 10.3                   | 0.0                        | 2.78            | 30         | 2.20  | 1.10 |
| 8449.0        | 0.29                              | 54            | 10.3                   | 0.0                        | 2.74            | 31         | 2.09  | 1.05 |
| 8450.0        | 0.31                              | 50            | 10.4                   | 0.0                        | 2.71            | 30         | 1.99  | 1.01 |
| 8451.0        | 0.49                              | 46            | 10.9                   | 0.0                        | 2.69            | 28         | 1.88  | 0.95 |
| 8452.0        | 0.53                              | 46            | 11.1                   | 0.0                        | 2.71            | 27         | 1.77  | 0.89 |
| 8453.0        | 0.47                              | 48            | 11.0                   | 0.2                        | 2.72            | 27         | 1.66  | 0.84 |
| 8454.0        | 0.36                              | 48            | 10.6                   | 0.0                        | 2.76            | 26         | 1.55  | 0.78 |
| 8455.0        | 0.24                              | 52            | 10.0                   | 0.0                        | 2.77            | 25         | 1.45  | 0.73 |
| 8456.0        | 0.41                              | 50            | 10.9                   | 0.0                        | 2.76            | 28         | 1.35  | 0.68 |
| 8457.0        | 0.56                              | 50            | 11.4                   | 0.0                        | 2.80            | 23         | 1.24  | 0.62 |
| 8458.0        | 0.52                              | 47            | 11.1                   | 0.0                        | 2.82            | 26         | 1.13  | 0.57 |
| 8459.0        | 0.39                              | 46            | 10.5                   | 0.0                        | 2.81            | 29         | 1.02  | 0.51 |
| 8460.0        | 0.32                              | 47            | 10.3                   | 0.0                        | 2.82            | 30         | 0.91  | 0.46 |
| 8461.0        | 0.36                              | 43            | 10.1                   | 0.0                        | 2.79            | 31         | 0.81  | 0.40 |
| 8462.0        | 0.34                              | 53            | 10.5                   | 0.0                        | 2.77            | 29         | 0.71  | 0.35 |
| 8463.0        | 0.30                              | 54            | 10.3                   | 0.0                        | 2.75            | 26         | 0.61  | 0.30 |
| 8464.0        | 0.43                              | 52            | 10.9                   | 0.0                        | 2.74            | 21         | 0.50  | 0.25 |
| 8465.0        | 0.83                              | 47            | 12.0                   | 0.0                        | 2.73            | 22         | 0.39  | 0.20 |
| 8466.0        | 0.38                              | 49            | 10.7                   | 0.0                        | 2.74            | 29         | 0.27  | 0.14 |
| 8467.0        | 0.33                              | 52            | 10.5                   | 0.0                        | 2.77            | 27         | 0.16  | 0.08 |
| 8468.0        | 0.63                              | 48            | 11.5                   | 0.0                        | 2.74            | 20         | 0.06  | 0.03 |

|            |        |            |        |            |
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|          |            |          |          |
|----------|------------|----------|----------|
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| CCCCCCCC | UU         | UU       | SSSSSSSS |
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| CC       | UU         | UU       | SS       |
| CC       | UU         | UU       | SS       |
| CC       | UU         | UU       | SS       |
| CC       | UU         | UU       | SSSSSS   |
| CC       | UU         | UU       | SSSSSS   |
| CC       | UU         | UU       | SS       |
| CC       | UU         | UU       | SS       |
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| CC       | UU         | UU       | SS       |
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